DOCUMENT RESUME

ED 415 843 IR 018 700

AUTHOR Raese, Robert
TITLE Internet.edu: A Sourcebook for Educators.
ISBN ISBN-1-57517-072-8
PUB DATE 1997-00-00
NOTE 230p.
AVAILABLE FROM IRI/SkyLight Training and Publishing, Inc., 2626 S. Clearbrook Dr., Arlington Heights, IL 60005; toll-free telephone: 800-348-4474; telephone: 847-290-6600; http://www.iriskylight.com.
PUB TYPE Books (010) -- Guides - Classroom - Teacher (052)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Access to Information; Class Activities; Curriculum Enrichment; Directories; Electronic Mail; Elementary Secondary Education; Information Policy; Information Utilization; *Internet
IDENTIFIERS *Technology Integration

ABSTRACT

This book provides a working knowledge of the Internet to assist teachers in implementing Internet resources in the K-12 curriculum. Part 1 - The Basics includes chapters 1-3. The first chapter deals with the information glut on the Internet and the time management problems this poses and presents a conceptual image of the Internet. Chapter 2 discusses general Internet directories and catalogs, and chapter 3 focuses on educational directories. Part 2 - The Details includes chapters 4-10. Chapter 4 describes e-mail functions, including Usenet and mailing lists. Chapter 5 addresses the World Wide Web; a number of Web sites designed by schools are explored, and basic instruction is given for the construction of a home page. Chapter 6 deals with using Gopher in the classroom, and the next chapter considers FTP (File Transfer Protocol). IRC (Internet Relay Chat) is discussed in chapter 8. Chapter 9 highlights educational telnet sites and chapter 10 considers acceptable use policies and Internet filters. Appendices A-F provide information on using the "Internet.edu" link at IRI/SkyLight, the structure of an e-mail address, downloading graphic files, CU-SeeMe (an audio-video conferencing technology), Archie (a tool used to search FTP sites) and subject area and grade level ratings and URLs for activities by chapter. A glossary, a 36-title bibliography and index are included. (MES)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 415 843

K-12

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
IN OTHER THAN PAPER COPY
HAS BEEN GRANTED BY

L. Stiegman

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

A Sourcebook for Educators

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

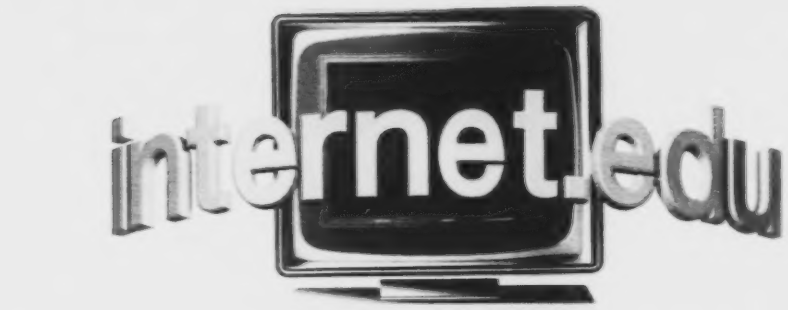
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Robert Raese

IR018700

BEST COPY AVAILABLE



A Sourcebook for Educators

Robert Raese

SkyLight
TRAINING AND PUBLISHING, INC.
Arlington Heights, Illinois

Internet.edu: A Sourcebook for Educators
First printing

Published by IRI/SkyLight Training and Publishing, Inc.
2626 S. Clearbrook Drive
Arlington Heights, IL 60005
800-348-4474 or 847-290-6600
FAX 847-290-6609
info@iriskylight.com
http://www.iriskylight.com

Creative Director: Robin Fogarty
Managing Editor: B. Zahan
Editor: Sabine C. Vorkoeper, Edward Roberts
Graphic Designer: Bruce Leckie
Cover and Illustration Designer: David Stockman
Production Supervisor: Bob Crump

© 1997 by IRI/SkyLight Training and Publishing, Inc.
All rights reserved.
Printed in the United States of America.

ISBN 1-57517-072-8
LCCCN 97-70566

1840-5-97V
06 05 04 03 02 01 00 99 98 97 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

To all the educators who are struggling to understand and use
the overwhelming advances in technology in the classroom
in order to prepare the next generation of children
for the challenges of the twenty-first century.
And to my grandchildren, Ronnie, Erin, and Emily,
who are part of that new generation.

Contents

Foreword		vii
Preface		xi
Acknowledgments		xiii
Introduction		xv
Part I—The Basics		
Chapter 1	Can the Internet Be Tamed?	3
Chapter 2	The Virtual Library Card Catalogue	15
Chapter 3	Educational Resources	23
Part II—The Details		
Chapter 4	E-Mail	35
Chapter 5	The World Wide Web	63
Chapter 6	Gopher	107
Chapter 7	FTP—Transferring Files on the Internet	125
Chapter 8	IRC	149
Chapter 9	Telnet—The Stone Age Internet Standard	165
Chapter 10	Postscript	183
Appendix A	Using the *Internet.edu* Link at IRI/SkyLight	194
Appendix B	The Structure of an Internet E-Mail Address	195
Appendix C	Directions for Downloading Graphic File	196
Appendix D	CU-SeeMe—An Emerging Internet Technology	197
Appendix E	An Archie Search	198
Appendix F	Subject Area and Grade Level Ratings and URLs for Activities by Chapter	199
Glossary		207
Bibliography		213
Index		217

Foreword

One of the biggest secrets about the Internet is that it is, with few exceptions, relatively easy to use. Almost anyone who can use a mouse can also use a Web browser to "point and click" their way around the vast information superhighway. The difficulty with using the Internet lies not in its navigation but in adapting its nonpeered and "free-for-all" information into a tool that can help a teacher and his or her students achieve a particular goal.

Among the many hurdles faced by a teacher seeking to integrate the Internet into his or her classroom are a number of myths. For example, a concerned parents' organization is said to have warned its members that "you can tell the content of a file on the Internet by its last three letters: for example, every file ending in '.gif' contains pornography, and every file ending in '.jpg' contains child pornography."

Internet mavens find this anecdote hilarious since virtually *every* image file on the Net—flowers, molecules, statesmen, buildings, paintings, algebraic equations, imaginary landscapes, as well as a small amount of pornography—is either a Compuserve bitmap (.gif) or a Joint Photographic Experts Group (.jpg) format file. Myths such as these need to be stamped out before any teacher can become a resource instead of a victim.

Even worse, teachers need to prepare students to fend off nasty stuff and nasty people. Consider a degenerate person, one so corrupt that he is one in ten thousand. Simple arithmetic quickly shows that on a slow day, with only one million people using the Net, one hundred such "nasty" individuals will be out there. As a result, it is a bad idea to post students' pictures on a class Web page, and students should not be allowed to correspond with whomever they want about whatever they want.

These problems, however, are dwarfed by the problem of "Truth." With just about every traditional classroom resource the facts are checked and rechecked, the presentation is tailored toward the students' ages and backgrounds, and the material is part of a planned curriculum that places the

information in the context of what the students already know and what they will learn later. In short, if the traditional classroom resources are not the Truth with a capital T, they are at least the next best thing.

None of these safeguards apply on the Internet. First, it is much simpler to publish something false than to publish something true. Nothing stands in the way of someone publishing incorrect information on a Web page, posting it on Usenet, or sending it as a response to a student's e-mail query. No wonder perpetual motion machines, weird theories of physics, Holocaust revisionists, alien abduction stories, and bizarre politics of every conceivable (and inconceivable) form can be found on the Internet. Students who are eager, accepting devourers of information will need to learn how to become steely-eyed, suspicious consumers.

Finding the truth on the Internet is much like looking up the spelling of a word in an unabridged dictionary. It is a lot easier if you already know the answer. Even the best search engine can be absurdly dumb. Searching for the word "hood" can yield results ranging from Mt. Hood Community College to *Little Red Riding Hood* to Hoodoo Gurus (a band). Students will need to learn how to second-guess these seemingly dull-witted search engines in order to get them to find something useful.

Then there's the problem of pedagogy. Teaching is difficult under the best of circumstances, and, unfortunately, the Net Fairy has not sprinkled Magic Teaching Dust on everyone who publishes on the Net. For example, correct and unbiased information is often presented in a style that indicates its author is much more comfortable writing differential equations than proper English sentences. As a result, a teacher's job will not get any easier as he or she integrates the Internet into the classroom.

Finally, the worst problem may be staying focused. Picture a youngster with a TV remote control clicking at quick intervals interspersed by long pauses of the worst drivel possible. Now picture the same youngster searching the Internet for an assigned topic and finding two references that are relevant but not terribly interesting, fifty that are *sort of* relevant but interesting, and forty-eight more that are irrelevant but *really* interesting.

These are just a few of the many problems that confront any teacher integrating the Internet into an existing curriculum. There are two options for dealing with them:

1. Spend a lot of prep time going down the information paths ahead of your students watching for pitfalls and predators in order to find the "good" stuff; or

© Skylight Training and Publishing Inc.

2. Use existing guides, such as this book, to help you and your students find the good paths.

Internet.edu deals with all of the above issues, and educators at all levels will find it to be a resourceful guide to successfully using the Internet in the classroom. The hands-on excursions incorporated into each chapter deal with some of the nitty-gritty of Internet navigation as well as bookmark some excellent classroom resources. This book does a lot of the footwork for the educator and provides a balanced guide to many fine Internet sites that can be used as effective learning tools for students of all ages.

As one who is intimately associated with the Internet, I recommend *Internet.edu* to any teacher who wants to effectively bridge the gap between the classroom and the information superhighway. Keep this book close by as you lead your students into the "brave new world."

Patrick Douglas Crispen
author of *Roadmap* seminar
crispen@campus.mci.net

© SkyLight Training and Publishing, Inc.

Preface

Anyone who has spent any time exploring the Internet, the fabled "information superhighway," eventually recognizes that it could as easily be called the *information haystack*. Finding the *needle*, that specific thing you are looking for on the Internet, can be a challenge and result in unproductive hours of random wandering.

Visiting the Internet can also be a bit like my first visit to the Smithsonian Institute. Like many first-time visitors, I foolishly allowed myself only a few hours to explore. Once I arrived, I saw the enormity of what was offered; only after the initial feeling of panic subsided did I stop running from display to display and decide to be more selective. I opened my brochure, selected one area, and spent the rest of my limited time leisurely exploring.

My other option was to continue running from display to display, exhaust myself, learn little or nothing, and come away dispirited or disgusted. I chose to use the available directory—a brochure prepared by someone who knew the institute.

Like the Smithsonian, the Internet can also be approached haphazardly. The result most likely will be unnecessary confusion, unwelcome frustration, and unproductive, aimless wandering about. Granted, not everyone has a particular purpose in mind when visiting either the Smithsonian or the Internet. But by approaching the venture with a guide, exploring can be very rewarding and productive. The Internet is efficiently organized and relatively easy to navigate once you know its structure, where and how to look, and how to choose from the many side streets on the way to your destination. *This book, with its accompanying activities, is a guidebook, or a floor plan, to the Internet.*

Internet.edu, as the title suggests, is geared toward educators. Aimed primarily but not exclusively at K–12 teachers, it leads you to a working

knowledge of the many general and educational resources available on the Internet and helps you find your needle in the proverbial haystack. Once armed with a working knowledge of the Internet structure and what it offers, you will be able to use the available resources and the suggested activities as learning tools in your classrooms. How you use these resources is up to you. Many opportunities for exploration are offered.

It is assumed that you have an Internet connection of some sort and that you have spent some time surfing the Net. It is also assumed that you know what "Telnet," "World Wide Web," "Gopher," "FTP," and related terms mean. If not, refer to the glossary. If you think that *Archie* and *Veronica* are just comic book characters, you might want to consult a general book on the Internet before you begin the activities.

For those interested in designing and implementing an Internet-based curriculum, or at least in modifying an existing curriculum by including the Internet as a classroom tool, this book offers the following: (1) it presents a cohesive model of the Internet and (2) puts Internet resources in your hands. You will know what to do with the resources once you have them. To that end, the activities are offered only as suggestions, designed to stimulate the flow of creative juices that course through the veins of every true educator. The rest is up to you.

Happy surfing!

© Skylight Training and Publishing, Inc.

Acknowledgments

I am quite sure that no one ever reads the acknowledgments in a book except the author and those individuals who feel they should have been included. Therefore, if I have omitted anyone who has contributed to the birth of this book, please know that it has been inadvertent.

To Shirley, my wife, who never stopped believing in me and who was an "author's widow" through much of the writing process, my deepest gratitude and appreciation for your unfailing support.

To Barry Chute, administrator *extraordinaire*, who challenged me to leadership in the application of technology in the classroom, my thanks. This book would not have happened without the vision you passed on to me at the high school we so fondly referred to as the "Starship Enterprise."

To Amy Wolgemuth, who helped fire my motivation and did a lot of hand-holding during the writing process; thanks for the encouragement, the pep talks, and the practical advice along the way.

To Julia Noblitt, who did an admirable job of analysis and advice at the beginning of the editing process, a thank you for your efforts under less than ideal conditions. Also, kudos to Sabine Vorkoeper, who worked diligently to polish the rough edges of the final manuscript in a timely and efficient manner.

To all my extended family members, who offered words of encouragement along the way, thanks for being interested in me and my work.

Finally, to the many nameless people who worked behind the scenes at IRI/SkyLight to produce a book like this, my thanks for your contributions as well.

IRI/SkyLight Training and Publishing Inc.

Introduction

If you are reading this introduction, you have probably bought into the idea that the Internet has the potential to become one of the most significant tools in an educator's "bag of tricks." You probably also have an interest that ranges somewhere between curiosity and excitement. If you are an Internet novice, you may be wondering what all the fuss is about. If you have explored the Internet enough to have become aware of the phenomenal implications of teacher/student access, you are probably as enthusiastic as I am.

When I started teaching back in the early sixties, my colleagues and I hoarded chalk, hoping to have enough to last until the end of the school year; the blackboard was our primary tool. Today's technology has greatly expanded the possibilities for teaching, but it has also greatly complicated the lives of many teachers. Anyone can use a piece of chalk—Internet access . . . now that's another story. At the school where I presently work, teachers are struggling to find the time to master new technologies. Although the computer revolution has spawned a great deal of excitement among educators, the apprehension that teachers have expressed should not be ignored. Many teachers already running on overload are opting out of the computer revolution because they want a life after school and are not willing to give up any more of their rapidly shrinking "free time."

At this point, I have good news and I have bad news. First, the good news. *Internet.edu* is an invaluable guide for any teacher—primary, middle, or secondary—who wants to investigate the many possibilities for implementing Internet resources into the curriculum, *any* curriculum. For example, if you are a middle school language arts teacher, this book will not

only acquaint you with a number of Internet resources that language arts teachers are already using, it will also help you find new Internet resources on your own. In addition, all the resources in this book are conveniently located as hot links on the IRI/SkyLight home page, which can be accessed with a Web browser (see appendix A for specifics).

And now for the bad news, which is not entirely surprising. *A time investment is required.* As an educator, you already know that anything of quality that pertains to the classroom requires a time commitment. What you get out of *Internet.edu* will be directly proportional to the amount of time you spend working through the investigative activities. However, it is structured so that it can be used at different levels of intensity. It can simply be a compendium of Internet resources, or it can be a conceptual key that opens your understanding of the Internet and shows you how to use it with maximum efficiency. You can also use it as an idea-starter for student lesson plans.

More good news! In the long run, *Internet.edu* will minimize the amount of time you spend searching the Internet. By making a commitment to work through the explorations, you will find that the Internet is no more daunting than a large library, and you will gain a familiarity with the means of finding whatever you want or need. Learning your way around now will eliminate the need for a huge time investment later.

Finally, each activity you work through can be modified for classroom use with students of all ages. Because the teacher explorations and resources are appropriate for both teacher and student, with slight adjustments in emphasis, the book can serve as a ready-made lesson plan for at least select portions of your curriculum. (Appendix F includes subject area and grade level ratings and URLs for teacher explorations.) To this end, suggested classroom activities at the end of each chapter contain recommendations for adapting chapter content for student use.

Internet.edu is organized as follows. Part I is foundational to the rest of the book and the chapters should be read consecutively.

- Chapter 1 deals with the *information glut* on the Internet and the unique problems this poses in terms of time management. A helpful conceptual image of the Internet is presented, organized by the method of data delivery. You can adopt this model as is or modify it to fit your mental framework.
- Chapter 2 zeros in on the best of *the general Internet directories and catalogs*, which are the keys to finding what you want in this huge virtual library.

IRI/SkyLight Training and Publishing, Inc.

- Chapter 3 focuses on the best of *the educational directories*, where you can find specific lesson plans, projects, and activities to bring into the classroom and enrich an existing curriculum.

If you are an Internet newcomer, read chapters 1 through 3 consecutively before tackling the other chapters. If you are an experienced Internet navigator, just check the listed resources in chapters 2 and 3, which are accessable as hot links on the IRI/SkyLight home page (see appendix A), and proceed to the other chapters.

Part II, chapters 4 through 10, covers various Internet tools, such as e-mail, the WWW, and Gopher, in conjunction with the visual model developed in chapter 2. Consult these chapters in any order.

- Chapter 4 focuses on *e-mail* functions, including Usenet News, mailing lists, Finger, and WWW *mailto:*. Classroom resources featured are forums, ask the expert, listservs, pen pal projects, and other writing exercises.
- Chapter 5 deals with the *World Wide Web*. A number of Web sites designed by schools are explored, and basic instruction is given for the construction of a Web home page. A Web search activity shows how to use a search engine on the Net. The rest of the chapter consists of "field trips" to Web sites that can be used in the classroom.
- Chapter 6 deals with using *Gopher* in the classroom. The first exercise explores the Gopher tunnel structure. Next, you are led through a Veronica search, a powerful Gopher research tool. Finally, several Gopher sites dedicated to education are presented for exploration.
- Chapter 7 focuses on the use of *FTP* as a research tool for information retrieval in the classroom; resources for instructional software are also highlighted.
- Chapter 8 deals with the sometimes unwieldy medium of *IRC* and suggests ways to use it while dealing with the inevitable and unavoidable problems of accessing an uncensored real-time arena.
- Chapter 9 highlights a number of educational *telnet* sites. Once the primary tool for Internet access, telnet is rapidly disappearing. Nevertheless, several good telnet sites are still available. You can access them with your browser or via your telnet client.
- Chapter 10 deals with *acceptable use policies* and *Internet filters*. It is geared toward the teacher or administrator who has to

deal with the unique problems that arise as a result of Internet access. The discussion details how schools and parents can deal with restricting access.

- The book closes with six appendixes, glossary, and bibliography.

Please note: As of publication time all the Internet addresses used in this book were active. Although you may find a few that have subsequently become inactive, their number should be minimal because the book focuses on those sites "that are in it for the long haul." Furthermore the described menu paths and Web page choices presented in this book were also current at publication time. However, you are apt to find a number of variations in the various menu paths and options that are suggested in the teacher excursions and student activities.

Good site managers constantly change, update, and redesign their sites. The Whitehouse site, for example, is completely different than it was just a year ago. Many of the sites that are suggested as resources are quality sites that are constantly redesigned and restructured to best serve their clients' needs. Therefore, you may find that some of the suggested directory paths or options that are provided have changed and don't produce the information they once did. The burden then shifts to you. If you like the resource site, sniff out the information from the newly designed structure. That is the price we must all pay for a dynamic Internet that is responsive to new technologies and user needs. Frankly, I wouldn't want it any other way, would you?

Finally, as mentioned earlier, all Internet resources in the book can be accessed via the IRI/SkyLight home page with your Web browser, with directions for access in appendix A. I hope that you will find *Internet.edu* and its companion links on the IRI/SkyLight home page to be valuable tools as you guide your students into the Information Age.

PART I
THE BASICS

CHAPTER

1

CAN THE INTERNET BE TAMED?

Perhaps the most significant problem facing any Internet surfer is the immense volume of available resources. One could spend months investigating a *single* Gopher site. Does that sound incredible? Even if you have already spent time on the Net, you probably have yet to fully grasp the immensity of the entity that you are dealing with.

Consider the numbers involved in exploring the menus and submenus of almost any Gopher. They are staggering. The typical menu structure of most Gophers is illustrated in figure 1.1. You can count on having around fifteen choices at the level of entry. Descending to the second level opens up from eight to fifteen more choices for each individual first-level option. Selecting any one of these second-level options opens up the third-level menu, which contains another five or ten choices. And in submerging to the fourth level, still more items come into view.

The following activity demonstrates the impact of these myriad choices.

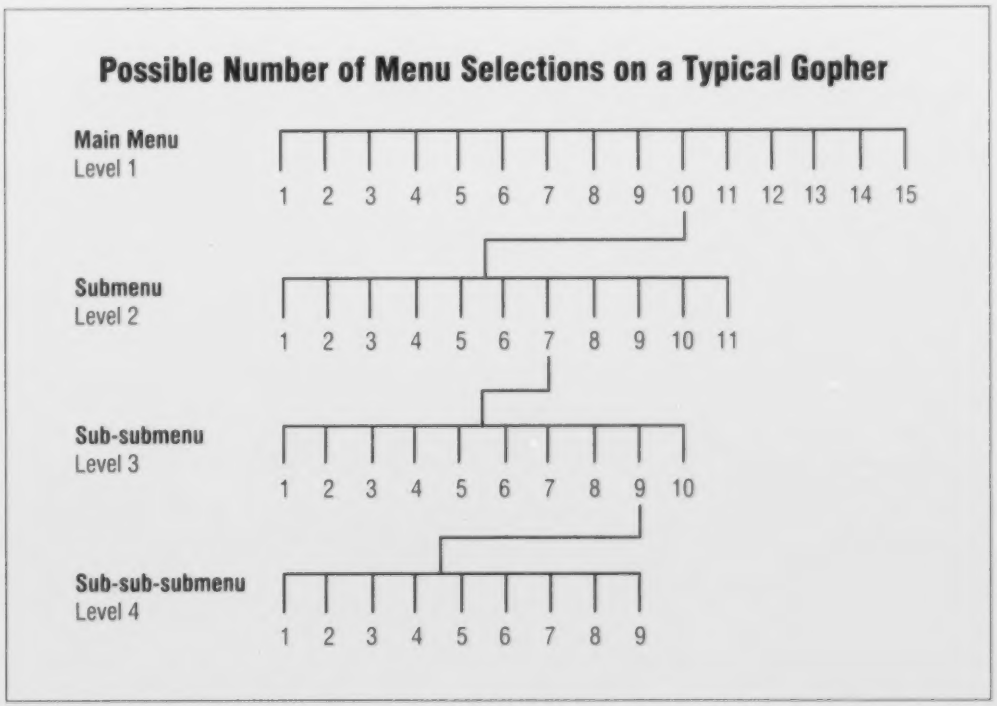

Possible Number of Menu Selections on a Typical Gopher
Main Menu
Level 1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Submenu
Level 2
1 2 3 4 5 6 7 8 9 10 11
Sub-submenu
Level 3
1 2 3 4 5 6 7 8 9 10
Sub-sub-submenu
Level 4
1 2 3 4 5 6 7 8 9

Figure 1.1 Typical Gopher Menu Structure.

BEST COPY AVAILABLE

IRI/SkyLight Training and Publishing, Inc.

Teacher Exploration #1

Study the graphical representation of the Gopher in figure 1.1. Assume that each menu choice at each level has the number of selections as illustrated in the figure.

1. How many menu paths can be investigated on this Gopher?
2. How long would it take to fully investigate this theoretical Gopher? (Assume a conservative estimate of two minutes to investigate each path.) Use a calculator—and try not to be surprised by the results!

Solution

1. 15 x 11 x 10 x 9 = 14,850 possible menu paths
2. 14,850 paths x 2 minutes per path = 29,700 minutes

   OR

   29,700 minutes ÷ 60 minutes = 495 hours

   OR

   495 hours ÷ 24 hours = *24 hours a day for at least 20 days to explore them all!*

• • • • • • •

Does the solution to the problem posed by our hypothetical Gopher astound you? Using the same conservative estimate of two minutes to explore each path and exploring at a realistic rate of three hours per day, a full Gopher inquiry in this case would take more than five months!

If the University of Minnesota Gopher is used instead of our hypothetical Gopher at the same rates of time as given above, plan on exploring for at least a year.

Now let's complicate matters even further with the fact that there are more than ten thousand gopher sites available worldwide, not to mention an equally burgeoning number of World Wide Web sites, currently estimated at almost a million. Add to that figure telnet and FTP sites. Are you starting to get a feel for the complexity of the Internet?

TAMING THE INTERNET

The title of this chapter asked the question, Can the Internet be tamed? The answer, of course, is "Yes!" Once we recognize that the "beast" is not the Internet but our fear of being overwhelmed by this ever-changing, ever-expanding medium, we have taken the first step toward taming it.

Another step toward "taming" the Internet is to visualize its structure metaphorically. In keeping with the goal of "presenting a cohesive model of the Internet," it is helpful to visualize the structure of the Internet in a number of different ways. Which model you gravitate toward does not matter; the goal is to find a framework that accomodates each component of the Internet.

The Library Model

Perhaps the best way to visualize the Internet is to use a library metaphor. Learning how to get around on the Internet is equivalent to knowing how to use a traditional library. Once you know how to use the card catalog, the *Reader's Guide*, and a few other resources, you can find just about anything you need. A virtual library such as the Internet is similarly accessible. Just think of the Internet as a virtual library that exists in cyberspace instead of at the corner of Oak and 4th streets, as a library whose information exists in the memory banks of millions of computers linked together worldwide instead of on shelves and in drawers.

When searching for something in an unfamiliar library, the first step is to get acquainted with the layout of the facility. A small library would require only a brief walk-through to learn where everything is located. A large library, whose physical dimensions might more closely approximate the "cyber-dimensions" of our Internet virtual library, provides users with a map or a floorplan. Why is there no cybermap posted at the entrance to the Internet? Think of the Internet as an open but unstaffed library—it works fine, but no one is on hand to answer your queries and no one has posted clear instructions to help you find your way around. The shelves are full and in order, but the reference desk has an empty chair behind it!

A proposed "floor plan" of the Internet virtual library is provided in figure 1.2. Meanwhile, you can be confident that even though the front desk in our virtual library is unoccupied, all of the "books" on the "shelves" in the "stacks" are catalogued and available.

(R) SkyLight Training and Publishing, Inc.

Six major areas contain the "titles" in this library—e-mail, the World Wide Web, Gopher, FTP, IRC, and telnet. Three other areas, which are not covered in depth, are Usenet News, WAIS, and Finger. Think of the information that you access in each of these six areas as data coming to you in six slightly different formats—just as you can find information in a conventional library in different formats, such as a book, a magazine, a newspaper, on microfilm, on a cassette, . . . or on a computer terminal!

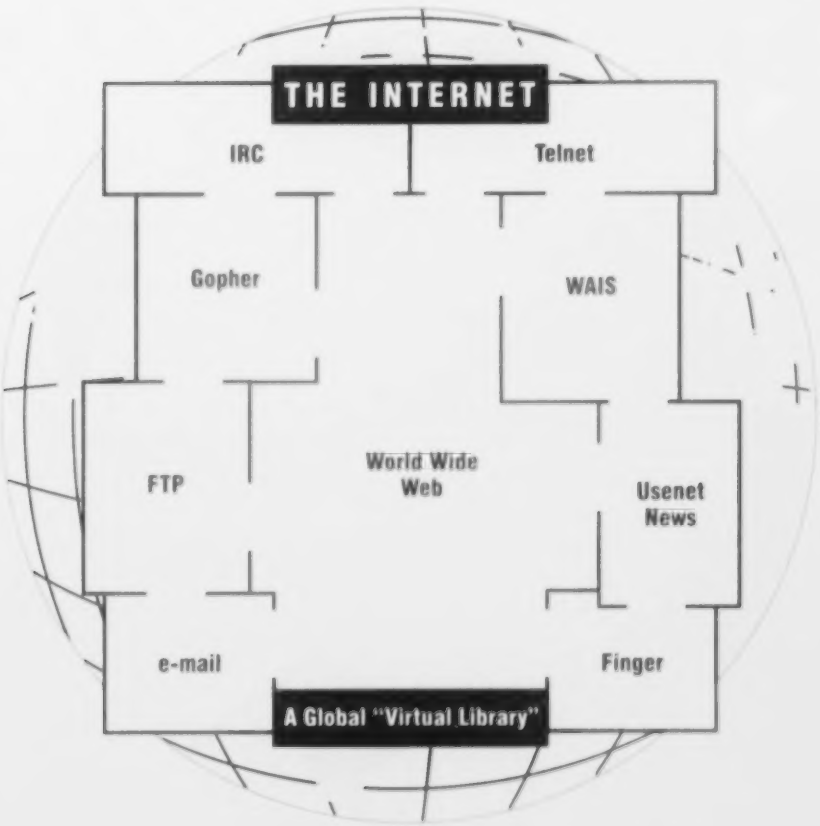


Figure 1.2 Internet Floor Plan.

©SkyLight Training and Publishing, Inc.

In addition to knowing a library's "floor plan," knowing how to use the search tools at your disposal is also vital. Instead of the card catalogue and the other reference tools standard in a conventional library, the Internet virtual library has many general directories and search engines to quickly help you find what you are looking for. No single catalogue or search engine contains all the data you may want; but as you acquaint yourself with the scope of each of these resources, you will know how and where to begin specific searches on future visits.

A number of foresighted individuals, organizations, and entrepreneurs have catalogued the Internet; resource directories are available, along with directories of directories. The card catalogue and the other reference tools of the Internet virtual library go by imaginative names such as Yahoo, Excite, and Yanoff's Connections (these and other resources are covered in detail in chapter 2.)

Anyone who knows the layout of the library and how to use its research tools is equipped to quickly locate information.

The Tree Model

Another model that captures the organization of the Internet is that of a tree of services, as shown in figure 1.3. This model organizes the Internet in terms of function rather than location. In cyberspace, "physical location" is nebulous at best—the term is in quotes to emphasize that the data available on the Internet, until accessed in a physical format (downloaded and printed onto a sheet of paper), exist only in the form of electromagnetic energy arranged in a binary format of positive and negative charges. Thus, the "physical location" of information is relatively unimportant. Data reside locally in particular computers scattered across the world, and data from halfway around the globe can be accessed in a matter of moments. Although a location address must be specified to use any of these services, what is more important is the means by which the information can be retrieved.

In the tree model, the roots can be thought of as the tangled maze of phone lines and modem connections that connect all the networks and users on the Internet. The trunk can be thought of as the backbone of the Internet, the high-speed central networks that move information to and from mid-level networks, which in turn distribute data to the end users. Just as the limbs, branches, twigs, and leaves on a tree form a mirror-image of

©SkyLight Training and Publishing, Inc.

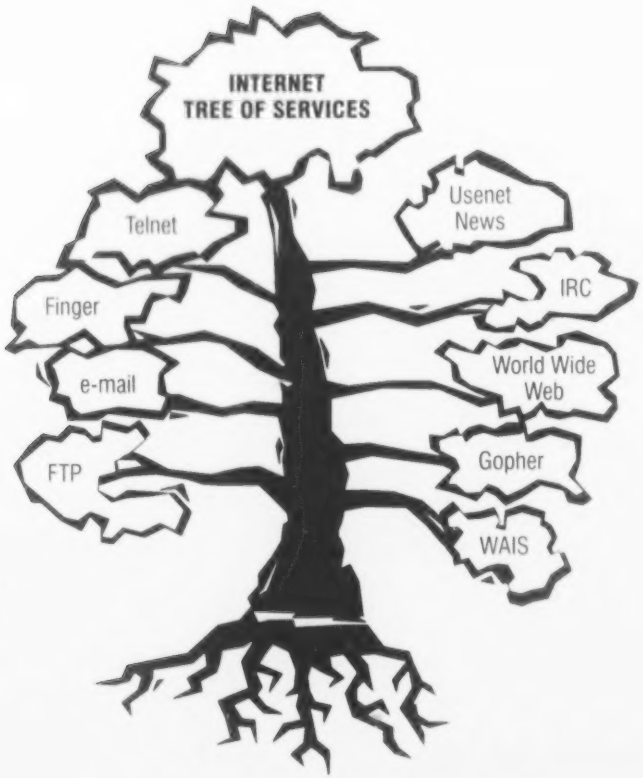


Figure 1.3 The Internet Tree of Services.

the network of roots below, so do the limbs of the Internet tree extend the reach of this dynamic organism. Its limbs, branches, and twigs extend the connections that the roots provide—in this case, connections to a variety of Internet sites in cyberspace, which are differentiated by the specific tool used to access them. Some sites can only be reached using e-mail; others with a World Wide Web browser; still others using a Gopher client. The leaves on the tree represent hundreds and thousands of Internet sites—computers all over the world containing information that you may want.

The services pictured on the Internet tree are simply ways of getting to the desired information regardless of where it is "located" in cyberspace.

IRI/SkyLight Training and Publishing, Inc.

The Highway Model

The familiar metaphor of the Internet as "the information superhighway" can also be useful. A highway is built with the express purpose of facilitating movement of people and goods; the function of the Internet is the movement of information. The information superhighway connects all of the contributing "feeder ramps," the labyrinth of phone and modem lines, allowing access to destinations near and far. Each Internet tool serves as a vehicle on this information highway, conveying different sorts of information. However, each tool uses a different format or protocol to do its job. These different Internet conveyances could be compared to cars, trucks, buses, limousines, taxis, and motorcycles. Although each has the same general function, each has a unique delivery method based on its particular purpose, such as the different kinds of passengers or cargo, and the speed with which it needs to arrive at its destination. And of course there are distractions in the form of billboards, traffic signs and signals, and a few crashes as you fly down the highway.

Figure 1.4 lists a number of Internet services. If any of these terms seem foreign to you, it might be time to buy yourself a good beginner's book on the Internet . . . or, since you already have this one, just work through the next activity, which focuses on the famous *Roadmap* seminar that was produced by Patrick Crispen at the University of Alabama. First offered in late 1994 through early 1995, *Roadmap* consists of twenty-seven e-mail lessons on the Internet that provide an overview of the Internet in bite-sized pieces. Although the seminar itself is no longer offered, you can still get the week-by-week lessons for the seminar from an e-mail service called a mailing list. You can preview the *Roadmap* lessons before you decide to order the entire package. It is *free* and *redistributable!* Since you can reproduce *Roadmap*, you might consider using it as a basic "text" for your students; or you might want to use selected portions to introduce various Internet tools. The reading level for the lessons is middle school to high school.

The following exploration is divided into two parts. The first part leads to a site where you can view the lessons contained in the *Roadmap* seminar. The second part shows how to retrieve any part of the *Roadmap* you want to use.

(R) SkyLight Training and Publishing, Inc.

A Review Chart of Internet Services

E-Mail	Electronic mail. Sent via the Internet through a modem over phone lines instead of the post office.
Finger	A client software used most frequently to find out about a person or organization on the Net, including their e-mail address.
FTP	File Transfer Protocol. A protocol for transferring both ASCII and binary files from a remote computer to your own. ASCII is a standard code usually used for text.
Gopher	A protocol, or procedure, that allows for menu-driven browsing of information at a remote site.
IRC	Internet Relay Chat. A real-time discussion format organized topically.
Telnet	Another way of connecting to a remote computer and making it behave as if it were your own. It was the primary way of linking site-to-site in the "early days" of the Internet.
Usenet News	A distributed bulletin board system that allows access to thousands of topic-specific newsgroups; users may read the posted messages (articles) of others with a newsreader and respond via e-mail.
WAIS	Wide Area Information Server. A computer tool that is dedicated to text searches within documents (that is, the search is not limited to document headers or titles) based on key words that the user supplies.
World Wide Web	A network of computers dedicated to the transmission of hyperlinked textual, visual, and auditory material using Web servers and Web browsers to handle the operations seamlessly and easily.

Figure 1.4 Internet Services.

BEST COPY AVAILABLE

Please note: Rapid changes continue on the Internet, particularly with respect to the increasing domination of the World Wide Web. The preferred method of Internet access in this book is always through a Web browser. However, not all school districts are able to keep up with technology changes. Some of you may still be accessing the Internet with tools such as telnet clients and Gopher clients. You may not even have a graphical Web browser at your command and may be forced to rely on public clients. Therefore, alternative paths of Internet access have been provided wherever possible. Be aware, however, that these alternate paths are rapidly disappearing, and telnet, the preferred method of accessing the Internet in the past, is rapidly declining in popularity. Many of the alternate links that were to be included in this book have already disappeared.

Teacher Exploration #2

PART 1 Previewing *Roadmap*

—via telnet

1. From telnet go to **consultant.micro.umn.edu**.
2. Login gopher, then select in order

```
>Other Gopher services
>North America
>USA
>Alabama
>U. of Alabama Dept. of Computer Science
>Other Gopher and Info servers
>Alabama (University Wide) Gopher server
```

IRI/Skylight Training and Publishing, Inc.

Follow the directions as given below for the Gopher path.

—via Gopher

1. Point your Web browser or Gopher client to **gopher://ualvm.ua.edu:70/11/**.

   This is the University of Alabama Gopher.

2. Select

   >Network Resources, Services and Information

3. Select

   >Roadmap Workshop

   An introductory menu will pop up displaying items for review. Included are:

   >What is Roadmap? (includes permission to redistribute)
   >How to get Roadmap via e-mail
   >Lessons 1–27
   >Two quizzes with answers

If you like what you see you can get any or all of it via e-mail. To do this, use the listserv that has been set up at the University of Alabama.

PART 2 Retrieving *Roadmap*

1. Send e-mail to **listserv@ualvm.ua.edu**.
2. Leave the Subject: portion of the letter blank. In the body of the letter type

   Get <FILENAME> <FILETYPE> F=MAIL

   <FILENAME > is replaced by the name of the *Roadmap* file you want; <FILETYPE> is always LESSON. For example, you might type

   Get MAP04 LESSON F=MAIL

   Within twenty-four hours you will receive the lesson that you requested by e-mail. If you wish to receive *Roadmap* lessons in larger blocks, look at the *Roadmap* Workshop menu item *How to Get Roadmap via E-mail*. Complete directions are provided.

3. Another way to retrieve the original Roadmap is via an HTML document version created by Nell Enns. Find it at **http://www.brandonu.ca/~ennsnr/Resources/Roadmap Welcome.html**.

IRI/SkyLight Training and Publishing, Inc.

4. Finally, *Roadmap '96*, an updated version of the original Roadmap, has been completed. Preview it at **http://ualvm.ua.edu/~crispen/roadmap.html**.

   There are two ways to participate. The first is to sign up with the Internet listserv and have the lessons delivered via e-mail. The other is to visit any one of the three Web sites that archive the lessons. Specific directions are provided on the *Roadmap '96* home page. Both version, '94 and '96, are suitable as an introduction to the Internet.

(R) SkyLight Training and Publishing, Inc.

CHAPTER

2

THE VIRTUAL LIBRARY CARD CATALOGUE

Chapter 1 focused on understanding the conceptual organization of the Internet and made use of the metaphor of the Internet as a cyberlibrary. Knowing this library's layout is the first step toward getting information off its virtual shelves; just as in a real library, you have to get to the shelf to find the book you want.

On the Internet, the shelves are the Internet sites. Their addresses are vital; without them the Internet information retrieval tools are useless. Extending the metaphor, although it's nice to have a "library" full of "books" available, browsing will be the only option unless you know where to find what you want.

Fortunately, a number of individuals and organizations have catalogued the Internet, making the task of searching for information easier. Various directories simplify the otherwise impossible task of finding specific information on the Net. Many resource directories and directories of directories are available.

The reality is that these catalogues are highly dynamic organisms, constantly changing as the Internet changes. However, as the number and capability of resources expand or contract, the directories are periodically updated to reflect these changes. Just as the librarian at your local library adds references to new acquisitions in the card catalogue, so the cyberspace "librarians" add the rapidly expanding resources to the virtual card catalogues. Once you acquaint yourself with the general features, content, and location of each directory, you always have an up-to-date guide to the resources available on the Internet. If you ever do get stuck, a number of search engines are available; a list is included at the end of this chapter.

Early approaches to publishing Internet resource guides resulted in phone book- or dictionary-sized volumes such as *The Internet Yellow Pages* and *The Internet White Pages*. The problem with these reference books is that they are partially outdated by the time they are printed and practically useless within a matter of months. Due to the dynamic nature of the Internet, such references necessarily contain disclaimers regarding the accuracy of the listed resources.

I remember the first time I purchased such a book. Thinking that I had found the key to the Internet, I rushed home to try some of the sites. Imagine my disappointment when I discovered that quite a few of the sites I thought looked interesting were already unavailable. Today, that book sits

McGraw-Hill Training and Publishing, Inc.

on my library shelf, and I can't remember the last time I used it. It was a $30 expense that taught me the following lesson: "If you want a map of Internet sites, you need to access the dynamic catalogues on the Internet that change with the natural ebb and flow of the resources available on the Internet itself." This experience eventually led to my discovery of the resources that are introduced in this chapter.

The most suitable directory of Internet resources is one that points to dynamic directories that are not going to go away. Some resource locators are clearly long term because of the obvious commitment of the organizations and individuals that stand behind them. For example, the Library of Congress education collection will certainly not go away anytime soon. It is going to expand and grow and continue to be a significant Internet "card catalogue." As new resources evolve and old ones disappear, dynamic directories such as these will accurately reflect the available resources.

The two activities in this chapter point you to the major directories on the Internet instead of attempting a "yellow pages" approach. Instead of listing hundreds of resources, the following old maxim is used as a guide: "Give a man a fish and you feed him for a day; teach him how to fish and you feed him for a lifetime."

So let's go fishing!

GENERAL CATALOGUES AND DIRECTORIES

Teacher Exploration 1 lists nine general directories of information available on the World Wide Web (hereafter, WWW). The best way to familiarize yourself with them is to spend several hours investigating their contents, perhaps spreading your inspection out over the course of a few days. Although this will be time consuming, it is necessary if you want to develop a familiarity with the available Internet indexes. You will need a Web browser to examine these sites. However, a graphical browser such as Netscape or Internet Explorer is not necessary. You can also use a text-based browser such as Lynx. Unfortunately, the public browser sites have dried up, limiting the alternatives for this route.

© Skylight Training and Publishing, Inc.

Teacher Exploration #1

Point your Web browser to the following URLs:

1. Yahoo **http://www.yahoo.com/**

   A WWW guide to home pages organized by subject with hot links to topics such as What's Cool, What's New, and What's Popular, as well as links to some of the directories listed below. Yahoo is often characterized as an essential guide with search capabilities. It has an excellent set of K–12 educational links.

2. EINet Galaxy **http://www.einet.net/**

   One of the most comprehensive directories of Internet resources, it contains more than 140,000 hypertext link titles classified by subject. Galaxy pops up as a reference on other indexes. Like most of the other directories, it is fully searchable. Look for `Education` under `Social Sciences`.

3. Yanoff's Internet Services List **http://www.spectracom.com/islist/**

   A spin-off of Yanoff's famous Web site list, this is an extensive list of thirty-four pages of hot links to various resources, categorized by subject heading and broken down into submenu selections. A must-see reference for every would-be navigator!

4. WWW Virtual Library **http://www.w3.org/hypertext/DataSources/bySubject/Overview.html**

   A subject guide consisting of everything imaginable from Aboriginal Studies to Whale Watching Web, it also has geographical indexes and search capabilities. It is a distributed library, which means that different subject listings are handled at different sites.

5. InterNIC Directory & Database Services **http://www.internic.net/**

   This resource contains the `Directory of Directories`, which can be browsed or searched, and which offers fascinating goodies such as the `Irish Electronic Yellow Pages`. This resource has directo-

ries of tons of stuff from the Arts to WWW sites. A White Pages provides search capabilities for persons and organizations on the Net.

6. Argus Clearinghouse **http://www.clearinghouse.net/**

   This former University of Michigan resource is now called Argus Clearinghouse. It is still a great resource despite its less prestigious name. Links are arranged primarily into educational categories such as The Arts, Humanities, Science, etc.

7. NCSA's Meta Index **http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Metaindex.html**

   A quality stop if you can get on. Although it's very busy, it offers an extensive index that is well worth visiting. Keep trying until you get on.

8. NCSA'S Mosaic Homepage **http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/NCSAMosaicHome.html**

   An excellent place to visit, especially the section entitled Starting Points. You might want to use this site for helping students get a handle on the Internet.

Beginning to feel overwhelmed? In order to make your job a little easier, hotlinks to all of the general directories listed above have been placed on the IRI/SkyLight homepage so you can point and click to your heart's content (see directions in appendix A).

SEARCH ENGINES

One problem with Internet directories and catalogues is the browsing time investment required to look for specific resources. To address this problem, clever people have designed powerful search engines that help zero in on specific items and make the job of finding what you are looking for less cumbersome.

These tools are indispensable to the Internet navigator. All of them allow the user to enter specific search strings, which are words or phrases entered into a search form to find something you are looking for. For example, you might be interested in reviewing General MacArthur's speeches in connection with a unit on the Korean War. Your search string might be "MacArthur + speeches." The search engine would then return a list of links that match the search string. Usually the matches are annotated and listed in order of their relevance to what you are looking for. You can see how valuable this kind of general tool can be.

The following activity lists nine search tools. You can't afford not to explore at least some of them.

Teacher Exploration #2

Yahoo **http://www.yahoo.com**
Magellan **http://www.mckinley.com/**

Both Yahoo and Magellan are searchable registries of Internet sites. However, many Internet sites are not included in the Yahoo and Magellan databases. This is because both Yahoo and Magellan depend on Web masters of various Internet sites to register their sites with Yahoo and Magellan, or sometimes Yahoo and Magellan staff discover and include new sites that they find. Nevertheless, both of these are recognized, high-quality searchable sites.

Seven sites that are quite different from Yahoo and Magellan are listed below.

Alta Vista **http://altavista.digital.com**
Excite **http://www.excite.com**
Infoseek Guide **http://guide.infoseek.com**
Lycos **http://www.lycos.com**
Open Text **http://www.opentext.com**
WebCrawler **http://webcrawler.com**
Search.com **http://www.search.com**

What distinguishes these search engines is the fact that they employ automated software called spiders or crawlers, which go out and search the Internet, retrieving new addresses that have appeared since their last foray. These sites all maintain up-to-date indices of almost everything that's out on the Net. Some restrict themselves to indices of Web sites, while others include Gopher, FTP, and even Usenet News articles. It is essential to become familiar with at least one of these search engines. Alta Vista is recommended if you must limit yourself to just one. Although they all work pretty much the same way, they do return different sets of links based on your input. If you have the time, investigate more than one. Be sure to read the excellent help sections each offers. (These search engines are also listed on the IRI/SkyLight homepage; see appendix A.)

• • • • • • •

Now that the general resources are in your hands, it's up to you. They are arranged in hierarchical order according to which resources are most valuable to educators. If you start with Yahoo and Alta Vista and use them exclusively, you will not go wrong. Over time, revisit this chapter and bite off some more. After trying out different options, you will discover that many of the links in the various directories are both cyclical and repetitive—every directory has an education section, every education section has a K–12 menu selection, and many of the links will be identical. Although the search engines typically yield different results with a given search string, many of the returned items will be the same. So pick one directory and one search engine and learn them well. In the final analysis, you are the one who must develop a familiarity with the resources that meet your needs as an educator and best suit the needs of the students you serve.

© Skylight Training and Publishing Inc.

CHAPTER

3

EDUCATIONAL RESOURCES

After working through the resources in chapter 2, you will have realized that the major general catalogs and search engines that were referenced *all* contain links to educational resources. These general resources will not be referred to again except as a reminder of their value in finding other educational resources. This chapter covers some of the major repositories of educational resources. The primary focus is *education collections*, which are just what their name implies—compilations of educational resources of various descriptions. Although many collections are available on the Internet, this chapter concentrates on just a few and provides pointers to the others. Remember, although many education collections are extensive; at present there is no definitive index that identifies all of the educational resources available on the Internet.

Returning once again to the library analogy, consider these resources to be the equivalent of having *several card catalogs for the same library.* For example, some of the education collections focus on resources by type, such as Gopher, WWW, or Telnet resources. Other collections focus on subject matter, such as language arts, history, or biology. Still others focus on quantity, while some make judgments on the quality of resources.

Each card catalog contains *some* of the resources found in the cyberspace library, but no single compilation contains them *all*. As you investigate various education collections, you will discover a subset of resources that is repeated in each collection because of its endurance on the Net and its commonly acknowledged value. Consider adding these sites to your bookmarks and explore them more thoroughly later.

Our first activity explores a typical education collection.

Teacher Exploration #1

Use your Web browser or Gopher client to Gopher to **gopher.cic.net:3005**.

or

Telnet to **consultant.micro.umn.edu**.

Select:

```
>8. other gopher servers
>9. North America
>1. All
>192. CICNet Select K-12 Internet Resources
```

Main Menu at gopher.cic.net 3005

```
>About This Gopher
>Search This Gopher (temporarily unreliable, sorry)
>Gopher Servers
>World Wide Web Sites
>Telnet Sites
>FTP Sites
>Mailing Lists (Listservs)
>Library Catalogs (list maintained by Yale University)
>Classroom Activities and Projects
>Publications
>Notices, News Flashes, and Other Short-term Information
>FYI, FAQs, training aids, and other resources
>If You're Not Sure Where to Start
>What's New or Changed Here This Week
```

The emboldened selections at the main menu site are the most productive for finding practical classroom resources. Many of the resources that are previewed in other chapters were found here. For example, Classroom Activities and Projects included a reference to Cloud Study Software. A complete description of the software, including system requirements, is offered, along with suggested classroom uses. It can be purchased on five diskettes at a cost of $20, or downloaded from an FTP site. Spend the $20. It is less painful that the download process.

• • • • • • •

© SkyLight Training and Publishing Inc.

BEST COPY AVAILABLE

Take time to explore what interests you, but be sure to visit the selections in bold print. They are a must. Remember to bookmark the resources you want to revisit; then develop your own list of favorites. One man's treasure is another man's trash!

Our next stop is the Library of Congress.

Teacher Exploration #2

Two possible paths lead to this resource. Access is provided via the WWW or via Gopher. Although the format of the information will vary slightly, it is the same resource.

Path 1
WWW to **http://lcweb.loc.gov** or to **http://www.loc.gov**.

Path 1a
Gopher to **marvel.loc.gov:70**.

Select:

```
>Library of Congress On-line Systems
>Connect to LOCIS
```

One way to access any Gopher site that has an education collection is to conduct a Jughead search, which is really a Veronica search limited to searching just one specific site. (See chapter 6 for a more complete discussion of Veronica and Jughead searches.) For example, a Jughead search of the Library of Congress menu system yields about *three times as many resources* than are contained in the "official" education collection.

Teacher Exploration #3 leads you through the steps of a Jughead search. If you are experienced with Veronica and Jughead searches, skip this activity. However, it is an excellent opportunity to observe the

©Sky Light Training and Publishing Inc.

editing process that takes place as various institutions structure their education collections based on what they think is important. By comparing the education collection with the search collection, you get an idea of the kinds of editorial decisions that go into forming an education collection. Remember that Internet catalogs, listings, collections, and directories *always reflect somebody's judgment* about the value of a particular resource.

Teacher Exploration #3

Access the Library of Congress Gopher using any of the paths described in the previous activity. Assuming you are at the LC Gopher, get back to the main page by using the *back* function on your software or typing *u* if you used the telnet Path 1b. From the main menu, select:

```
>Search LC Marvel Menus
>Search LC Marvel Menus using Jughead
```

At the `Enter search string` prompt, type in `edu*`.

This is called a *wild card search* and returns anything from the LC Marvel menu structure containing the prefix *edu*. The search will be returned in Gopher menu format, from which any item can be accessed. A Jughead search is not a document search but only a title search of Gopher menu titles or document titles, whichever you select. The *How to Use Jughead* menu item provides a complete discussion of its features. Using the wild card approach will expand a search to include any menu item with a word in its title that relates to education. Items that contain words like the ones below will be returned:

education	educational	educating	educable
educator's	educators	Edupage	educative
Educom	Robert Burns's Lyrics [liberty.uc.wlu.edu]		

(c) Skylight Training and Publishing, Inc.

The wild card search releases Jughead from the restrictions placed on it if the word *education* had been used as the search string. Using that search string would return only those items that specifically contain the word education. Items containing the words *educational* or *educator* in their titles would not be returned. The star (*) tells Jughead to return any title that contains the prefix *edu-*.

The weakness of a wild card search is that you may get irrelevant information. For example, if the words *educe* or *eduction* are present in any LC Marvel menu, that item will also be returned. Not to worry though! *Edu** is a pretty safe bet as a wild card search string. According to my dictionary, "educe" and "eduction" as the only other two words that have *edu-* as their prefix, and it is not likely that they will be on the LC Marvel menus. Using the wild card search with discretion produces very satisfying results. My Jughead search did not yield anything unrelated to education.

A Tangential Investigation: An interesting thing to try at this point is to give Jughead several different search strings to see what it comes up with. Try these: education, educate, educational, edu, ed, educator.

Whether you take this tangential trip or not, the extent of the education collection at LC Marvel will be obvious. Think back to the mathematical problem in chapter 1 and recall its lesson: there is not enough time to explore everything available. Remember, the value of any general resource is in the fact that you are aware of it, know how to find it, and know how to use it. Just as you return to the card catalogue in your local library many times, so will you return to the Library of Congress educational collection many times to find what you are looking for. For now, just look at what interests you.

• • • • • • •

The next activity is a stop that could be the largest single list of educational resources—the education collection at Rice University, Houston, Texas. An online visit reveals a twenty-two-screen-page main menu!

Hundreds of specific resources are listed, along with pointers to hundreds of other resource sites. This is an excellent site to visit just to become aware of the vast resources available to educators.

Teacher Exploration #4

Use your Web browser or Gopher client to access: **riceinfo.rice.edu:70/11/Subject/Education**.

Because of the depth of these resources, scan through the entire menu without making a specific selection, but bookmark a few that look interesting for later reference. Then follow your list of bookmarks and systematically eliminate those that are not what you want.

Our next stop . . . Outer Space! NASA has been in the Internet business for a long time—almost as long as they have been in the space business. Aware that their field of endeavor was a natural for science education, the people at NASA joined hands with educators early on, providing educational resources primarily to the science education community. Today, their Internet education collection is second to none at pointing to resources for educators of all grade levels and disciplines. Let's take a look.

Teacher Exploration #5

Please note: A Gopher or telnet client will not work here. You need a Web browser to look at this site.

1. Point your Web browser to: **http://quest.arc.nasa.gov/OER/EDRC25.html**.

2. Among the many menu items available at this site, two deserve special attention:

   a. Resource Lists and Subject Trees on Education

   A *resource list* is a set of pointers to many types of educational resources from many sources. A *subject tree* directs you to available resources by subject matter. An extensive listing is found here. Select your areas of interest, explore, and enjoy!

   b. NASA Internet Educational Resources

   Follow the path:

   >NASA Internet Educational Resources
   >Lewis Research Center K–12 Home Page
   >Dr. John Eigenauer's K–12 Internet Resources

   This yields a comprehensive list of specific resources as well as pointers to other lists of resources. *If you are going to depend on one collection to use as your favorite "card catalogue," this could be it.* In fact, make a point of deciding on a favorite education collection after exploring all of them. It makes things much simpler, and you will develop a familiarity with the nooks and crannies of the collection, enabling you to find resources more efficiently.

• • • • • • •

One last site worth visiting is a good example of a commercial site that provides free information for educators while promoting a number of publications available for purchase. Wentworth Worldwide Media focuses primarily on Internet applications for educators. As a result, their education collection is geared toward the practical. Although this is the final stop in this chapter, you may want to explore some of the other collections listed after this activity.

© SkyLight Training and Publishing, Inc.

Teacher Exploration #6

1. Point your Web browser to **http://www.classroom.net**.
2. Select

   >GRADES--Best K-12 Internet Links

This is where you find the Classroom Connect™ archive of WWW educational links organized by broad subject categories, such as administration, language arts, science, etc. Searching the database with a search word or phrase will find what you are looking for *first* . . . if it is there. Although directions to only one area of this site are included, it has a lot to offer and merits a complete examination.

• • • • • • •

A summary list of several education collections, including the few that were suggested in this chapter, is listed on the next page.

Peter Li, Inc. Teaching and Publishing, Inc.

A List of Education Collections

Institution	Gopher Address or URL	Menu Path
Go M-Link (Education Collection)	**http://mlink.lib.umich.edu**	>Michigan Electronic Library >Go to Electronic Library >Education
Library of Congress (LC Marvel)	**gopher://marvel.loc.gov:70**	>Global Electronic Library/ Social Sciences/Education
Michigan State University	**gopher://burrow.cl.msu.edu:70**	>Network and Database Resources/ Internet Resources by Subject
North Carolina State University	**gopher://dewey.lib.ncsu.edu:70**	>NCSU's Library Without Walls/ Study Carrels/education
RiceInfo (Rice University CWIS)	**gopher:// riceinfo.rice.edu:70**	>Information by Subject Area/ Education
NASA	**http://quest.arc.nasa.gov/ OER/EDRC25.html**	>Resource Lists and Subject Trees on Education or >NASA Internet Educational Resources
Wentworth Worldwide Media	**http://www.classroom.net/**	>Grades

In addition to these collections, subject trees, which include education collections from twenty universities, can be accessed directly through:

Michigan State University	**gopher://burrow.cl.msu.edu:70**	>Network and Database Resources >Internet Resources by Subject

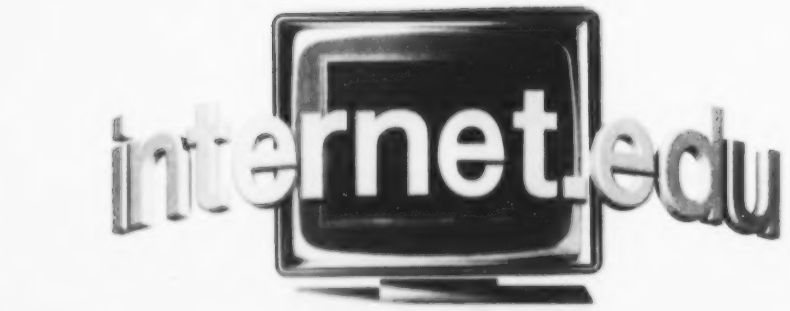
When you access the menu path on this gopher, note the twenty or so menu selections that read Subject tree at xxxxxxxx University, where xxxxxxxx is the name of the university.

BEST COPY AVAILABLE

PART II
THE DETAILS

CHAPTER

4



E-MAIL

At one time, and not too long ago, the Internet *was* e-mail, as far as most people were concerned. E-mail comprised about 90 percent of all Internet traffic, and until just recently e-mail was the only link to the Internet provided by the major commercial online providers. Only a few short years ago, the Internet was unknown territory for most educators, and e-mail was still a curiosity for those few "in the know."

Today, "Internet" is an education buzzword. Teachers discuss it almost every day in their lounges, and educators across the country recognize that the implications of this new technology go far beyond the ability to send a message to a kid away at college. Although the Internet is presently being redefined in terms of the World Wide Web, e-mail has secured an important foothold as an educational tool in the classroom. This chapter explores some of the ways e-mail is used to expand the horizons of students around the world.

THE FIVE FUNCTIONS OF E-MAIL

Chapter 1 used a tree model of the Internet for conceptual simplicity. In order to deal with the full scope of e-mail, a modified tree model is more appropriate. As you approach the organization of the Internet with your students, you may wish to consider the same sort of model adjustment. Figure 4.1 shows the model as it appeared in chapter 1. The revised model that specifically addresses e-mail is shown in figure 4.2.

This is a significant modification of the usual view of e-mail. As Internet technology evolves, e-mail will continue to evolve as well and will be understood in different ways than it currently is. (If you already have a good grasp of how e-mail, mailing lists, and Usenet News are interrelated, skip this section and go directly to Teacher Exploration #1.)

Comparing the Internet Tree of Services in figure 4.1 with the adjusted Tree of Services in figure 4.2, reveals a number of changes. First of all, Finger has been removed as a separate limb and added as a sub-branch of the e-mail limb. Second, mailing lists, which did not appear on the original tree, has been added. Third, Usenet News, which appeared as a separate limb in figure 4.1, appears now as a sub-branch of the e-mail limb, and it has two branches of its own, *post* and *reply*. Finally, e-mail is now shown with three branches of its own, *conventional*, *mailto:*, and *forms*. These five prominent functions of e-mail merit closer inspection:

(R)SkyLight Training and Publishing, Inc.

Figure 4.1 Internet Tree of Services.

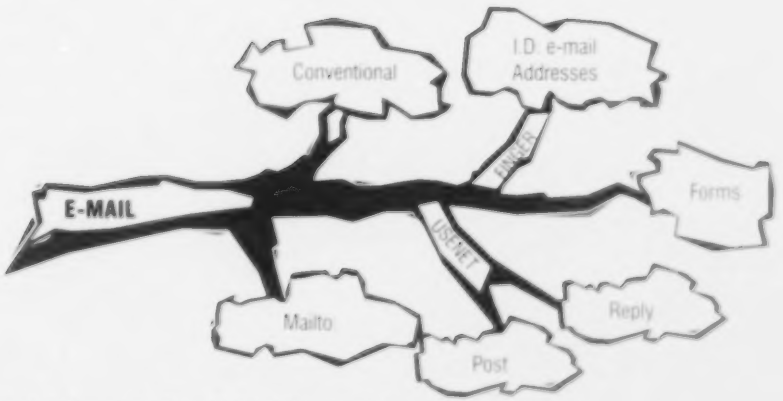


Figure 4.2 Internet Tree E-Mail Branch of Services.

1a. Conventional e-mail (Case #1)

This is e-mail as most people understand it. Communication is *direct*. You compose a message and provide the address for your mailer. The mailer at the other site receives the message and puts it in the correct person's mailbox. The mailers are able to communicate with each other because they both use a protocol called SMTP (Simple Mail Transfer Protocol) (see figure 4.3).

Figure 4.3 Conventional E-Mail Model (Case #1).

1b. Conventional e-mail (Case #2)

This type of e-mail involves mailing lists and is both *direct* and *indirect*. The recipient of direct e-mail messages is an automated mailing list manager called a *listserv*, which distributes mail to designated recipients. The recipients of indirect messages are the people who have subscribed to that particular mailing list. The listserv forwards your message to all of that mailing list's subscribers (see figure 4.4). If you want to respond to just the originator of a message, bypass the listserv and use conventional e-mail with the individual's rather than the listserv's address.

Figure 4.4 Conventional E-Mail Model (Case #2).

(R) SkyLight Training and Publishing, Inc.

2. Mailto:

Here, e-mail is used in conjunction with a Web browser. It is initiated by pointing and clicking on an e-mail address link that is displayed on a Web home page; you do not need to type the address in. While many Web browsers support the mailto: function, some do not. Check yours by clicking on an e-mail link. You will either get an error message that says `mailto: not supported`, or your mail will go through with no trouble (see figure 4.5).

3. Forms

A form is a versatile construct used by advanced Web pages and supported by many Web browsers. Technically, it is not e-mail in the usual sense of the word. However, for all practical purposes, it performs as if it were e-mail. Here, a message is typed directly on a Web page into a provided form, which usually appears in the shape of a rectangular box. The message is then handed over to a gateway script which, in turn, directs the message wherever the owner of the Web page wants it to go (see figure 4.5).

For example, one of the sites visited later allows you to submit a five hundred-word story to a contest using conventional e-mail or by cutting and pasting from your word processor directly into the handy form provided on the home page. Your story is then delivered to the e-mail address of the person in charge of the contest. The *send e-mail to* messages that are common on Web sites are already being replaced by specialized forms.

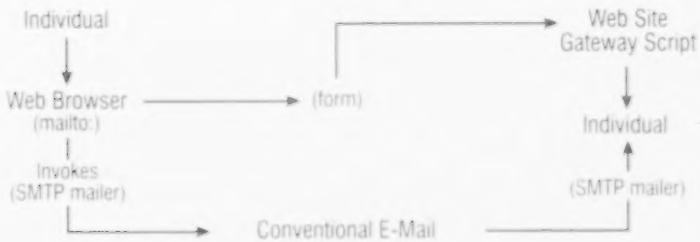


Figure 4.5 E-Mail via the WWW

4. Post

This e-mail clone is a function of a Usenet News reader. It lets you post an original e-mail message to a particular newsgroup or respond to an article someone else has posted. This specialized mailer sends your e-mail message to the Usenet News site that you have accessed. That site posts the message to the appropriate news group and also distributes it to the other Usenet News sites around the world. You do not have to supply it with addresses as you would your mailer. Both your e-mail address and that of the site and group to which it is being sent are handled automatically by the Usenet News mailer (see figure 4.6).

5. Reply

Another mailing function of a Usenet News reader, this type of e-mail lets you reply personally to someone who posts a particular message in much the same way that the *post* function operates. However, your message goes only to that single individual's e-mail address and is not posted for all the world to read (see figure 4.6).

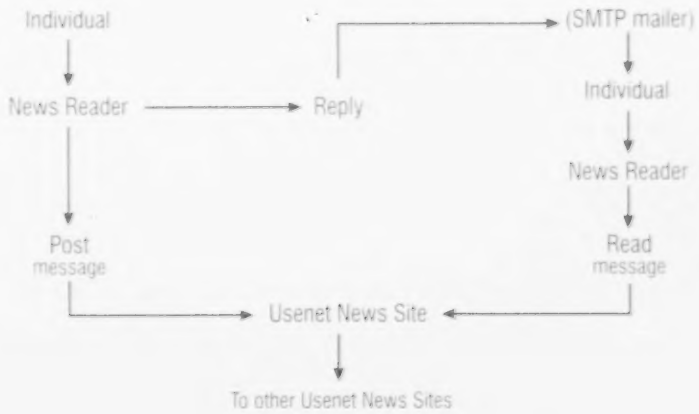


Figure 4.6 E-Mail via a News Reader.

©1995 Sky Light Training and Publishing Inc.

The two kinds of e-mail activities usually used in the classroom center around personal e-mail. Teacher Exploration #1 focuses on key pals and key pal collaborative projects. (A "key pal" is a pen pal that one communicates with online, using the keyboard for composing messages instead of a pen.)

Teacher Exploration #1

PART 1 An Introduction to Key Pals

1. From your Web browser, go to **http://www.yahoo.com/**.
2. On the home page, enter the search string `pen pal`. Several items are returned.
3. Scroll through these items and evaluate them for acceptable classroom use.
4. Compare your findings with those shown below.

   For example, your Yahoo search will have located some sources that:

   - want money to join their key pal club;
   - center around romance;
   - are adult-oriented; or
   - are otherwise of dubious character.

   There are many potential sources for key pals. For adults, just about any source would be acceptable. However, if you are going to use the e-mail key pal medium in your classroom, you need to be very careful about potential pals your students will be linked up with.

   The best source for crosscultural key pals and collaborative key pal activities is Intercultural E-mail Classroom Connections (IECC), a free service sponsored by St. Olaf College in Minnesota. This service is recommended because of the amount of teacher control it affords.

©Wright Group/McGraw-Hill

All interchanges begin with teacher-to-teacher contact at which e-mail lists and topic parameters can be discussed.

Let's Gopher to St. Olaf's and look around.

PART II Key Pals in Depth

1. Gopher to **gopher.stolaf.edu**
2. Select:

```
>Internet Resources
>St. Olaf Sponsored Mailing Lists
>IECC (Inter-cultural E-mail Classroom
 Connections)
```

Two helpful areas are:

```
Search IECC Connections
Information about IECC
```

3. Select Search IECC Connections.
4. Enter the search string German just to take an experimental excursion. What did you discover?
5. Now click on one of the displayed items. What did you get?

Here is a partial listing of the more that one hundred available items:

```
-Mary Ell Re: REQUEST GERMAN CLASS for EXCHANGE
-Peter Ri Re: Re: Seeking German/English classes
-wickline k Re: Seeking English/German speaking
 classroom
-Mary El Re: Desperate for German writers
-Steve Le Re: 4th yr German class looking for
 partner
-hinhj@L Re: Seeking native German speakers
-tod@l Re: Seeking German-speaking classroom
```

Click on any of the archived requests and you get information about that particular item. Here is an edited sample that was retrieved at ran-

© Skylight Training and Publishing, Inc.

dom. (Do not try to contact Mr. Handel. His name and e-mail address are fictitious re-creations of an actual posting.)

> My name is George Handel and I teach German at Mount Holyoke College in South Hadley, Massachusetts. I'll be teaching a conversation/composition class in German next semester and would like to find another German class in the United States or elsewhere in the world that would like to communicate with my students.
>
> Our semester begins on the 26th of January and my class would be ready to start the project at that time. Please reply directly to me via e-mail if you are interested. We can work out the details then.
>
> I look forward to hearing from you!
>
> George Handel (ghandel@gsc.mtholyoke.edu)

The possibilities of this kind of activity are endless. Although you cannot control the e-mail messages that are eventually sent back and forth by your students, you can significantly reduce the risk of students' communicating outside of your subject area by initially dealing directly with another teacher.

6. If you are interested in simply establishing a list of intercultural key pals for your class to communicate with informally, repeat steps 1 through 4 above and use the search string pen pal instead of German. Here is an edited random sample of what you might find (again, the name and e-mail address have been changed):

> I have a group of eleven very eager second and third grade students who want to communicate with other children their age. We are located in Southwestern Ontario, so we would like to have pen pals from Eastern Canada, Western Canada, or anywhere in the United States. Our students have been

© Skylight Training and Publishing, Inc.

BEST COPY AVAILABL

```
communicating with other children at our school as well as
with students in other schools of Southwestern Ontario. We
would like to expand our horizons. Anyone interested, please
send a message to Rebecca Sarns at rsarns@ref.north.net
```

7. To establish a key pal collaborative project of your own, select `Information about IECC` from the Gopher menu (see step 2 above). The following categories are explained:

IECC	Intended for teachers seeking partner classrooms for international and crossscultural e-mail exchanges.
IECC-HE	Intended for teachers seeking partner classrooms with institutions of higher education.
IECC-PROJECTS	An electronic mailing list where teachers may announce or request help with specific projects that involve e-mail, either internationally or crossculturally.
IECC-SURVEYS	An electronic mailing list where students and teachers can post requests for assistance with projects, surveys, and questionnaires.
IECC-DISCUSSION	Intended for general discussion of questions, issues, observations, etc., regarding the IECC.

Complete directions for posting a project or request are included with each category.

Classroom Suggestion: Use IECC to set up a collaborative activity with a classroom in another part of the world that you have brainstormed with your class.

BEST COPY AVAILABLE

© Skylight Training and Publishing Inc.

Please note: As IECC states, "This list is not for discussion or for people seeking individual key pals." If you want a source for individual key pals, AskERIC sponsors a mailing list for K–12 students. Send e-mail to **listserv@suvm.syr.edu** to subscribe. Leave the subject header blank and type `subscribe K12Pals <yourname>` in the body of the message.

The next activity takes a look at a location that provides a "Find a Keypal" service to kids, along with a number of activities that stimulate their desire to write. This Web site, which uses *mailto:* combined with *forms* in order to function, is called KidsCom. It touts itself as a communication playground for kids between the ages of 8 and 14.

Teacher Exploration #2

1. Point your Web browser to **http://www.kidscom.com/**.
2. Look around to see if this site is appropriate for use with your students. Be sure to check out:
   a. the *What do ya think?* section,
   b. the *Write Me A Story* section,
   c. the *Graffiti Wall* section, and
   d. the *Find a Keypal* portion of the page.

   These areas are fully explained at the Parents' and Teachers' Place, which you select after accessing the KidsCom home page listed above. At present you can access the site in English, Spanish, French, or German (a bonus for foreign language teachers!).

Please note: If after exploring this site child security becomes an issue, click on the link A KidsCom Message to Parents and Teachers **or contact the KidsCom staff by clicking on** Feedback.

As with every resource on the Internet, teachers must take responsibility for a thorough exploration of the site before providing it to their students. The previews provided in this book are intended as helpful guides in this delicate undertaking.

As is probably obvious by now, e-mail naturally lends itself to writing activities. In this audiovisual age, it is not surprising to find renewed emphasis on writing skills quickly accommodating itself to the Internet via the medium of e-mail. Our next visit is a moderated Web site called KidPub. It uses conventional e-mail, mailto:, and forms functions to accomplish its purpose of providing a place for kids to publish their creative writing efforts.

Teacher Exploration #3

1. Point your Web browser to **http://www.kidpub.org/kidpub/**.
2. Click on the e-mail link KidPub@KidPub.org.
3. What do you see in your browser's URL window? If your browser supports mailto:, you will see mailto: KidPub@en-garde.com.
4. Click on this link and your mail program will be invoked by the browser. Try it and leave a short message.
5. Next, check out the stories by selecting either Newest stories or Older stories to see what students have submitted. Read one or two to get a flavor of student abilities.
6. Check out the other menu items and find out how to use KidPub with your students. A partial list of writings that were found under *Older Stories, Vol I* includes:

©1997 Skylight Training and Publishing, Inc.

```
"Rodent Reunion" by Alex, age 11, Scotland
"The Missing Treasure" by Jenny, age 9
"Rainbows" by Katherine, age 6
"Insanity, Boredom, and Nightmare: Three Poems" by
Kristen, age 13
"I Killed the Orange!" by Ari and Oren
"The Magical Rock" by Abby and Lauren, age 7
"Invasion of the Aliens, Part 1" by Eric
"Zaroff's Revenge" by Marianne, age 13
```

Note the variety, the age differences, and the collaborative efforts. This site is a unique tool for teaching all the steps of the writing process, especially the last step—publication. At last, a worldwide forum that brings real meaning to students as they write compositions to be read by their peers.

Two other sources that focus on student writing are worth noting:

- *MidLink Magazine*—a cooperative electronic magazine for middle schoolers. Any school is welcome to contribute. Submissions are accepted via e-mail, FTP, and conventional mail. A featured special project, *Mailcall from the Baldridge*, keeps in touch with an NOAA (National Oceanic & Atmospheric Administration) expedition studying the greenhouse effect and climatic changes. Contact **http://longwood.cs.ucf.edu/~MidLink/** for information and **caroline_mccullen@ncsu.edu** to e-mail.
- *KidNews*—an electronic newspaper that highlights the most interesting stories submitted by students. Categories are similar to those of a conventional newspaper. Submissions are made by e-mail, or a student can compose an article on a word processor and then cut and paste it to a special forms window and submit it that way. Graphics may be submitted on diskette via regular mail. Contact **http://www.vsa.cape.com/~powens/Kidnews.html** or **powens@cape.com**, or if you are at the site and your browser supports mailto:, just click on `Comments to Peter Owens`.

. . . . . .

BEST COPY AVAILABLE

IRI/Skylight Training and Publishing, Inc.

Got a question? Want an answer? *Ask the Expert* e-mail forums are a popular resource that helps teachers and students with those toughies that have a habit of popping up. *Ask Dr. Math* is perhaps the best known. Operated by students and teachers at Swarthmore College in Pennsylvania, *Ask Dr. Math* is designed to assist any student from elementary through high school.

Teacher Exploration #4

1. Dream up your own question or send the following question to **dr.math@forum.swarthmore.edu**.

   ```
   My teacher told our class that it is impossible to
   divide by zero. I thought that dividing anything
   by zero would be zero. If 0 ÷ 0 = 0, why doesn't 5
   ÷ 0 = 0? Please explain this to me.
   ```

2. See what kind of response you get. As a courtesy to the service, you might want to explain that you are checking the forum to see if it would be useful to your math curriculum.

Please note: This same college also sponsors *Math Forum*, a Gopher site that offers a number of features such as *MathMagic*, which focuses on word problems. For complete details, check out their Gopher site at **gopher://forum.swarthmore.edu** or the Web site at **http://forum.swarthmore.edu.**

Here are a few more question-and-answer services to check out:

- *Ask Prof. Math* is for K–9 students. Send e-mail to **maths@sbu.edu**. The subject line `Request gradelevel` is self-ex-

planatory. In the body of your query, include some background to your question, your name, and your e-mail address.

- *Ask A Scientist* archive is located at **http://kiwi.dep.avl.gov/askasci/askasci.html**. Although e-mail questions are no longer accepted, the archive contains a good collection of questions from 1992–1995.
- *Ask-A-Geologist* has a geologist of the day from the U.S. Geological Survey answer your questions. Responses to easy ones come through in a matter of hours; toughies may take a few days. Send e-mail to **Ask-A-Geologist@usgs.gov**. A Web page, which is under development, can be reached at **http://walrus.wr.usgs.gov/docs/ask-a-ge.html**.

Classroom Suggestion: Using the information above, acquaint your students with the "Ask a Question" services. Challenge your students to conduct inquiries that relate to your classroom work.

. . . . . .

A mailing list is a helpful and informative e-mail activity. A number of them exist for both teachers and students. Kidlink, perhaps the best known for kids, is explored in the next activity. Its general purpose is to engage youngsters 10 to 15 years old in global communication, which is accomplished in a number of ways. Find out everything you need to know by accessing the Kidlink Gopher. It has evolved over the years to include a kids' IRC server as well as a gallery of computer art created by kids. Its mainstay, KidCafe, is the list through which kids around the world communicate with each other.

Teacher Exploration #5

. . . . . .

1. Gopher to **global.kidlink.org**
2. From the main menu select

   >About the Kidlink Projects.

3. Next, select

```
>General information about Kidlink
>General info about Kidlink in the language you want
```

4. Download the document and try to answer the following questions:
   a. What is the topic of focus for Kids-96?
   b. How can a teacher keep current with the KidLink projects?
   c. What is the first step students need to take to join KidLink?
   d. What is KidCafe?
   e. What is KidForum?
   f. How do you subscribe to these lists?

Classroom Suggestion: Gopher to Kidlink using the above directions; follow the suggestions for introducing KidCafe in your classroom and implement them.

• • • • • • • •

A mailing list may generate hundreds of messages a day. Chances are you will barely be able to keep up with more than one or two. Teacher Exploration #6 invites you to investigate several lists. In order to decide which ones are most beneficial, look at the archives of past communications to get a feel for the usual fare.

One easy-to-use mailing list is *The Scout Report*, published by the Internet Information Center (InterNIC). It describes itself as a "weekly publication offering a selection of new and newly discovered Internet resources of interest to researchers and educators, the InterNIC's primary audience." The list is annotated and focuses on the common Internet tools.

For example, a recent weekly *Scout Report* had a listing called "ALA 'Booklist' and Young Adult Library Services Best Books Lists." This site, sponsored by the American Library Association, at **http://www.ala.org/booklist/index.html**, includes a number of features useful to an English teacher. Among them is *Books for Youth*, a category subdivided by general grade level and by fiction and nonfiction. Each recommended book had a content summary along with price and publisher. Although clearly aimed at librarians, this site could be used

© Skylight Training and Publishing Inc.

to motivate readers of all ages and since it is geared toward researchers and educators, it is an Internet gem worth looking at. Unlike many mailing lists, *The Scout Report* also has a WWW site for previewing upcoming offerings.

Teacher Exploration #6

1. Point your browser to **http://rs.internic.net/scout/report/** to access the index of *The Scout Report*. Notice how the index is set up, with the current month's reports listed first.
2. Select the latest entry and look through it. Read the introductory material. Note the brief review at the beginning of this week's contents—a way to quickly grasp what follows.
3. Read through some of the items.
4. Now go to the end and find the subscription directions. You should have found these two subscription options: send e-mail to **listserv@lists.internic.net** and in the body of the message type `subscribe scout-report` or, to receive *The Scout Report* in HTML format for local posting, type `subscribe scout-report-html`. If you use the latter option, you will receive the report in HTML script form, a special file that uses language Web browsers can understand. The nice thing about getting the HTML version is the clickable hot links to the various new services. All you have to do is get online and load the *Scout Report* HTML file using your browser, and you're in business. Just click on any of the listed links and explore the site.

   If online time is an issue and you just want to scan the *Report* without accessing any of the sites, invoke your browser offline and casually read the file without your service provider's clock billing charges to your account. However, the best part about using the mailing list as opposed to visiting the Web site is that the *Scout Report* shows up in your mailbox every week. You can also subscribe right from the *Scout Report* Web page by clicking on the link Sub-

scribing to the Scout-Report or Scout-Report-html mailing lists.

In order to reach the goal of equipping you to find your own resources, this chapter's pursuit of educational mailing lists ends with a special search. The next two activities explore an excellent site that provides educational resources by tool category—EdWeb.

Teacher Exploration #7

1. Point your Web browser to **http://k12.cnidr.org:90/lists.html**. What you get is a catalog of existing educational mailing lists. If you can't find what you're looking for here, you probably won't find it.
2. Pick the mailing lists that look interesting and investigate them. Be sure to visit the EdWeb home page at **http://k12.cnidr.org:90** and see what else you can find.

So much for mailing lists. Now for a quick look at Usenet News. If you are not familiar with Usenet News, you will be surprised to find that it is not the Internet medium you may think it is. When I first encountered the name, I thought it was a wire service, somehow hooked up to the Internet, that provided up-to-the-minute news happenings from around the globe. I could not have been farther from the truth.

Usenet News is the world's largest ongoing e-mail forum. It deals with literally thousands of topics from the Simpsons to molecular biology. You can read the entries, called articles, from the newsgroups of your choice using a newsreader (which is part of your browser software package or a seperate software offered by your service provider), and are able to post replies to the newsgroup or to the individual writer of an article, or compose your own article for posting to the group.

A number of Usenet groups are available for educators. Some are unidirectional, reporting on important stories in education with no opportunity to respond. Most Usenet groups, however, involve active discussions among teachers, students, parents, researchers, and others on a variety of educational issues.

For example, the following is a brief listing of just a few of the groups available. Access these groups by entering the address in the appropriate place on your newsreader.

Usenet Groups

Address	Subject
alt.education.disabled	Education issues facing the disabled
aus.education.bio-newtech	New technologies in biology teaching
bit.listserv.vocnet	Vocational education discussion group
clari.nb.education	Moderated discussion of computer use in education
comp.ai.edu	Applications of artificial intelligence to education
comp.edu.composition	Writing instruction in computer-based classrooms
misc.education	Discussion of the educational system
misc.education.home-school.christian	Christian home schooling
misc.education.home-school.misc	Almost anything about home schooling
misc.education.science	Issues related to science education
pnet.school.k-12	Discussion about K–12 education
pnet.school.k-8	Discussion about K–5 education

The next activity continues the exploration of EdWeb to see what is available in the way of K–12 newsgroups for educators and students.

©1998 Skylight Training and Publishing, Inc.

BEST COPY AVAILABLE

The problem with newsgroups, as previously noted, is that they reflect the judgment, experience, or taste of the compiler. The best advice is to become familiar with your newsreader and scan the thousands of newsgroups to see what looks good.

Teacher Exploration #8

1. Point your Web browser to **http://k12.cnidr.org:90/usenets.html**. The beginning of this particular list focuses on K–12 Net, a subset of Usenet News groups that carry the K-12 heading. Please note that you will not find the *.alt.algebra* group in this list. What else is missing?
2. The task of scanning *all* the newsgroups is left to you. Sorry . . . you will have to make your own list of favorite groups. For a complete list of Usenet newsgroups, go to **http://tile.net/news/**.

Now for a quick stop at an unusual Internet service that is often foreign even to experienced navigators—Finger.

> Finger - 1. One of the five digits of the hand; especially one other than the thumb. 2. A quantity of liquor equal to approximately a finger's breadth. 3. To identify or point out with precision. 4. An Internet service that is used to find out public information about Internet users.

In my many years of surfing the Net I have only used Finger a few times, mainly because it is temperamental, unreliable, and often does not yield the information one wants. Typically, Finger is used to find someone's e-mail address on the Internet and other useful information that he or she may wish to make public such as their phone number or home address. It also tells you when the individual last read his or her e-mail and other little

©1996 Skylight Training and Publishing, Inc.

info-tidbits the individual wishes to share with others. Finger can supply you with the unknown e-mail address and the other public information about an individual, assuming that he or she is registered somewhere on the Net . . . theoretically, that is.

The catch is that not all servers support Finger. In addition, even if they do, they often support it only for users within their system. For example, I tried to find my cousin's e-mail address at a major university and was denied Finger access. Thus, what should be a very useful service in theory, turns out to be less than ideal in practice. To find out more about this type of information service, consult any book on the Internet.

Personally, I would rather use some of Finger's more bizarre applications. Finger's Coke servers are an example of the lengths to which some people have gone with their use of the Finger service. Your students will really enjoy learning about this tangential Finger path.

Want to know how many Cokes are left in the Coke machine and how long they've been cooling? Believe it our not, back in the 1970s computer science students at Carnegie-Mellon University hooked a computer up to their vending machine. According to the well-known story the students had to walk quite a distance to the Coke machine only to find it empty or serving warm Cokes. Eventually they found the solution—devise a set of switches to sense the contents of the machine, hook a Finger sever up to it, give the Coke machine a phony e-mail ID, and then Finger the Coke machine from the computer science lab whenever they were considering making the long trek. Leave it up to computer science students to figure out a really useful application of an Internet service!

This zany solution has evolved into quite a popular service on the Internet. Generically called Coke Servers, certain Finger sites provide information about various kinds of things, all of them useful to someone, although maybe not to you.

The next exploration is a just-for-fun exercise. I won't tell you what you will get by accessing these sites. Just give them a try. Some are good for a few laughs; others are truly useful.

© SkyLight Training and Publishing, Inc.

Teacher Exploration #9

1. Finger the following locations with your finger client. (If you don't have a finger client, follow step 2 below.)

   copi@oddjob.uchicago.edu
   forecast@typhoon.atmos.colostate.edu
   quake@geophys.washington.edu
   drink@csh.rit.edu

   Note that these are e-mail addresses. Typical Finger clients will ask for this information in two separate fields on some occasions and in one on others. What happened in each case is one of two scenarios:

   a. A dummy user ID was created and the Finger information is whatever the site administrator wants to indicate. One such site is **quake@geophys.washington.edu.**

   b. A real user ID has been used and the owner of that ID has put information other than personal information on the Finger file that he or she wants to display for you. A site of this kind is **copi@oddjob.uchicago.edu.**

2. If you don't have your own Finger client, point your Web browser to the following site:

   http://www-cse.ucsd.edu/users/bsy/coke.html.

   This is the Web equivalent of many finger sites. Have fun, and be sure to take a Coke break with your kids once in a while!

Please note: With few exceptions, most "Coke Servers" are very dynamic—here today and gone tomorrow. This is because they are frequently maintained by individuals who graduate from their university or just get tired of changing the information from day to day. If you get hooked on this "bizarre" use of the Finger service, you can probably keep up

with the dynamic nature by periodically doing a search on AltaVista or one of the other search engines mentioned in chapter 2 that employ a spider. Just use "Coke Server" as your search string. Be sure to have some fun with your students on this activity.

Classroom Activity #1

Depending on the experience of your students:

1. Explain the structure of an e-mail address (see appendix B).
2. Have students practice sending e-mail to each other.
3. Send e-mail to a local politician or to the President.

Please note: If your students do not have e-mail addresses, see chapter 9, Classroom Activity #6, for directions on establishing an account at a freenet.

Classroom Activity #2

1. For elementary school students, use the "tin can and string" method of communication to illustrate how personal e-mail, mailing lists, and Usenet News differ from each other.
2. Supply several cans or plastic cups and a ball of string. Use a problem-solving approach and challenge students to set up a situation that is analogous to each e-mail function in figure 4.2.

IDG Books Worldwide, Inc., A Division of International Data Group

Classroom Activity #3

This idea has been used time and again because children are naturally interested in themselves.

1. Pair up youngsters as pen pals with students from another participating class.
2. Have students write descriptions of themselves according to specific parameters.
3. Have students e-mail their self-descriptions to their pen pals.
4. After all descriptions have been mailed, each class constructs a bulletin board "picture" of its partner class by putting its name on the picture along with pictures from magazines that represent each class member and some of his or her interests or characteristics.
5. When the project is completed, take a picture of the bulletin board and send it to the partner class via conventional mail or:
   - If you have the necessary equipment, scan the picture, turn it into a .gif file, and FTP it to an anonymous FTP site, from which it can be downloaded by the partner class.
   - If you want to challenge your students, have them investigate the process of sending a binary file via e-mail.
   - Post the picture on your class's home page! The other class can view it via the WWW.

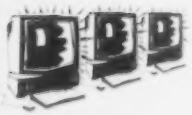
If you need more inspiration, scan the archives of the IECC to see what others have done. Select `Archives` on the IECC menu.

Classroom Activity #4

1. Visit KidPub, download a few stories, and read them to your class (see Teacher Exploration #3 above).

Copyright Corwin and Addison, Inc.

2. Use any of the eplorations covered in this chapter to stimulate interest in creative writing for publication.
4. Engage students in the writing process in the course of your regular instruction.
5. Have students collaborate or work alone on their stories.
6. Show students how to register and submit their stories.



Classroom Activity #5

1. Have students go to the *Ask A Scientist* archive (see Teacher Exploration #1).
2. Have each student select a question for class discussion.
3. Read the questions, solicit answers, and then read the correct answer.
4. This can be used as a "Question of the Day" activity.

Classroom Activity #6

1. Preview KidsCom with your students by visiting the Parents' and Adults' Place, mentioned in Teacher Exploration #2.
2. Have students respond to and report what they like about the site.
3. With younger students, prepare a home communication paper that contains the URL for KidsCom and invite them to investigate the site and visit the Parents' and Adults' Place portion of the page.
4. Leave the bottom half of the communication paper blank so students can communicate to their parents, either in writing or by illustration, what they found at KidsCom.

©1997 Wright Group/McGraw-Hill

5. Write a brief letter dealing with security issues and attach it to the communication page being sent home.
6. Obtain permission from parents for students to register for KidsCom.
7. Make the site a regular place to visit during writing activities.

Classroom Activity #7

1. Have each student in your class find a keypal using the KidsCom site.
2. From time to time, structure a writing activity that can be sent to a keypal. One possibility is a descriptive writing assignment in which students describe their home and ask for a corresponding description.

Classroom Activity #8

1. Go to EdWeb at **http://k12.cnidr.org:90/lists.html**.
2. Select a few mailing lists and Usenet News groups that you want your students to follow.
3. Make different groups of students responsible for keeping track of significant information and report it to the rest of the class periodically.

Classroom Activity #9

1. Visit either of the following finger locations, which provide information on earthquakes and storms:

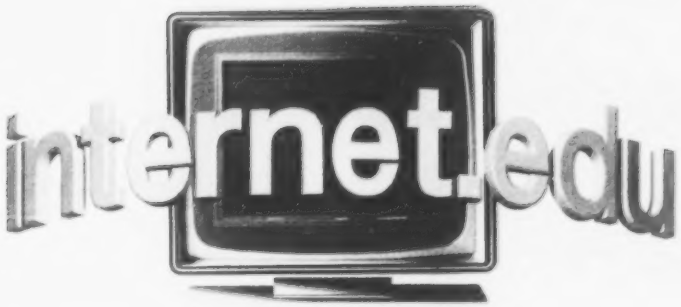
   forecast@typhoon.atmos.colostate.edu

   quake@geophys.washington.edu

2. Use your finger client and enter the user ID and host in the appropriate forms.
3. Use the information found here for lessons on interpreting data or on converting data into charts or graphs.
4. Visit the sites periodically and record the data. Compare the short- and long-range data.

CHAPTER

5



THE WORLD WIDE WEB

In 1993, the presence of the WWW on the Internet was barely noticeable. Thanks to the highly successful Web browser, Mosaic, which used an Internet protocol that handled images as well as text, the inevitable happened. In just a few short years it has literally taken over. Who but the stodgiest Unix freak could resist the colorful graphic presentations that Mosaic was able to deliver? The Web, which started out as a hypertext medium mixing text and images, has quickly grown into a hypermultimedia tool. Today it is a highway for sound bites, animation, and moving pictures as well as the more standard text/image format. No doubt the WWW, a tool that lends itself to the audiovisual representation of information, will continue to dominate the Internet.

With that in mind, there is also no question that the Web will dominate the educational use of the Internet. The only thing holding it back at present is the hardware required to deliver the Web in all its graphic glory. It will be a while before Pentiums, Web browsers, and high-speed leased lines are standard equipment in *all* schools.

However, the strength of the WWW is also its weakness. If you have ever waited for a large graphic file to appear on your Mosaic browser with a 14.4K modem, you know what I mean. Although some of the graphical presentations on the Web are stupendous—check out the MTV graphic at **http://www.mtv.com**—the time required to retrieve them can be discouraging. Nevertheless, the activities in this chapter are probably the most stimulating ones in this book.

One of the fascinating explosions that has taken place on the Web is the development of *home pages*. Many organizations and individuals have created home pages to broadcast something about their organization to the world. In the past few years, businesses have begun to creatively visualize the power of the WWW and have become an increasing presence there. InterNIC reports that 97 percent of domain name registrations are now commercial. Many schools with Web servers have had their students create home pages, some of which are excellent links to all kinds of resources on the Net. As of this writing, the Lycos spider, a Web search engine, reports fifty million unique URLs on the Web. Between 1995 and 1996, the number of schools with home pages on the Web rose from two hundred to about 7,000. (Check the International Registry of K–12 Schools on the Web at **http://web66.coled.umn.edu/** for the current figure.)

Let's take a look at a home page. It is much easier to show one than it is to define one. This is the first screen page of the IRI/SkyLight home

IRI/SkyLight Training and Publishing Inc.

page. You can find it at **http://www.iriskylight.com**. It contains a title and basic information that indicates its purpose.

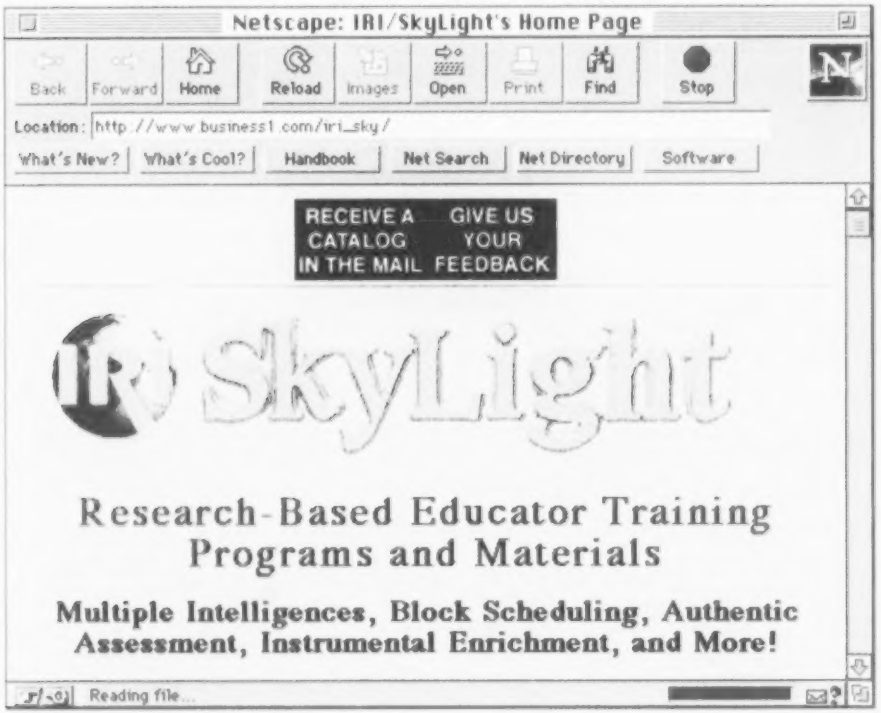


Figure 5.1. A Sample First Screen Page.

Now let's put it in words. A home page is a hypertext document that exists on a WWW server. It contains information and links within the document as well as to documents existing elsewhere on the WWW. A home page may be "owned" by an individual, an educational institution, or a business. It provides information in a variety of forms, as well as links to related information.

Hypertext is textual material with embedded links that are highlighted. Click on a highlighted word, phrase, or graphic and you access another document whose WWW address is associated with the highlighted link. One can travel from document to document anywhere in the world by selecting a

© SkyLight Training and Publishing, Inc.

BEST COPY AVAILABLE

highlighted link. Hypertext documents use a special formatting language called HTML—hypertext markup language.

A home page can be many screen pages long. The second screen page of the IRI/Skylight home page is shown in figure 5.2. Notice the underlined words and phrases in the figure, which also appear colored on your monitor's screen. Pointing your mouse at the underlined (highlighted) words connects you to the resource the link points to.

A home page can exist on your local hard drive or even on a diskette. When you are online, the links are "hot" regardless of where the home page resides. The brief tutorial on Web page creation (see Teacher Exploration #4) will ask you to utilize a diskettte or hard drive to create your practice home page. Most individuals and organizations ultimately want their home page to exist on a Web server so it can be accessed on the Internet.

A number of Web browsers such as Netscape, Internet Explorer, and Mosaic are available to the general public, often as "freebies." In addition, a number of service providers, such as Netcom, have developed their own browsers, which their clients may use. Unfortunately, at present not all browsers can display all of the innovative developments available. In fact, if you access the IRI/SkyLight home page with a browser other than Netscape, what you see will probably differ from these examples.

CREATING A HOME PAGE

It seems like everybody wants to create a home page. Educators' Listservs and Usenet News pages contain many how-to questions. So, how hard is it to create a home page? A lot easier than you might think. The first activity explores a location with home pages that schools from across the country have created. After viewing what other schools have done, you just might want to create your own home page.

Figure 5.2. A Sample Second Screen Page.

BEST COPY AVAILABLE

Teacher Exploration #1

1. Point your Web browser to **http://web66.coled.umn.edu/**. This Web home page is a jumping-off point to Web pages created by thousands of schools across the United States and from around the world.
2. Select `International Registry of K12 schools on the web`. Then select your state from the list.
3. Click on your state. A list of school home pages from your state will appear. Select one you want to look at and click on its name.
4. Display the source code for the home page. Most browser's let you look at the source code by selecting `View` followed by `Source file`.
5. The source code will look something like figure 5.3, taken from the Cousino High School home page, under the Michigan heading. Although the wording on the page you select will be different, the HTML formatting will be very similar.
6. Notice the <brackets> with words or symbols in them. These are formatting commands or *tags* that tell the browser how to arrange the text and images on the screen.
7. Examine the source code of the home page you chose to view and try to make some sense out of it.
8. Examine the home pages of a few more schools and compare them to their source code tags. What do you think the following tags determine? You should be able to figure them out.

```
<H1>
<H2>
<H3>
<A HREF= "http://www.macomb.k12.mi.us">
<IMG SRC="flag.gif" ALT="Image">
<HR>
```

(c) Skylight Training and Publishing, Inc.

```
<HTML>
<BODY BGCOLOR="white" TEXT="black" LINK="blue"
VLINK="green">
<HEAD>
<TITLE>Cousino H.S - Warren, Michigan</TITLE>
</HEAD>
<IMG SRC="school2.gif" ALT="Image">
<PRE><H1>Cousino High School </H1></PRE>
<IMG align=right SRC="flag.gif" ALT="Image">
<PRE><H3>"Home of the Patriots"</H3></PRE>
<H4>This is an experimental WWW home page. Enjoy! It is be-
ing developed and maintained by staff and students as a re-
search tool for the Cousino/Internet community. Click on
colored text to link to helpful Internet
resources.<STRONG><I> Please e-mail your suggestions for
other resources you think we should add to our list. We
would appreciate knowing of any links that do not work.</
I></STRONG>
<A HREF="mailto:chshome@admin.wcs.k12.mi.us">
chshome@admin.wcs.k12.mi.us</A>
We have provided a link to the <A HREF="http://
www.wcs.k12.mi.us"> WCS
home page</A> should you desire to access other information
about the Warren
Consolidated Schools. We have also provided a link to the <A
HREF="http://www.macomb.k12.mi.us"> Macomb Intermediate
School District</A> It is a very useful page with lots of
good educational resources, especially for, but not limited
to, teachers.</H4>
```

Figure 5.3 Sample Home Page Source Code.

Answers:

<H1> A signal to the browser to print the largest possible text.

<H2> The next size down for display text.

<H3> One more size down.

BEST COPY AVAILABLE

`<A HREF= "http://www.macomb.k12.mi.us">` A hot link to some other Web location denoted by the address in quotes.

`<IMG SRC="flag.gif" ALT="Image">` Places a flag on the screen. The image is in a graphic file called flag.gif As an alternative, an icon or the word "image" may be displayed if the viewer's browser is incapable of displaying the image.

`<HR>` Draws a horizontal line across the screen.

Are you thinking, "This doesn't look too tough"? You are right. Anyone can figure HTML out pretty quickly just by comparing a home page to its source code. In just one evening, an astute observer can learn enough to design and produce an elementary home page complete with text and images.

. . . . . .

The following activity explores free help for creating a home page—an HTML primer and an HTML editor. (If you are not quite ready to tackle creating your own home page, proceed to the field trips toward the end of the chapter and return to the following three activities at a later date.)

Teacher Exploration #2

. . . . . .

PART I—HTML Primer

1. Point your Web browser to **http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html**.
2. The HTML primer indicated in this URL will be displayed on the screen with links to various topics such as Tags, Links, and Background Colors.

   To read the primer off line, save the file, *htmlprim.htm*, to your hard drive. Later, when you are off line, load the file with your Web browser. Because all the links are internal to the document, the entire document will be available on your hard drive.

3. The document can also be printed by selecting *File, Print*. Beware—it is thirty-five pages long!
4. You now have your own HTML textbook.

PART II—HTML Editor

HTML Assistant is a Windows text editor with extensions for creating HTML hypertext documents. Here's how to get it.

1. Ftp to **ftp.cs.dal.ca.** or
2. Login as anonymous and give your e-mail address as the password.
3. After login `cd htmlasst/`.
4. Type `binary`.
5. Type `get htmlasst.zip`.

<*>6. Unzip `htmlasst.zip`.

1a. Point browser to **ftp://ftp.cs.dal.ca.**

2a. Browser automatically logs you on.

3a. Point to the `htmlasst` directory.

4a. Click on `htmlasst.zip`.

<*>6a. Unzip `htmlasst.zip`.

. . . . . .

Mac users please note: Simple HTML Editor (SHE), a simple editor for creating HTML documents is available for free from ftp://ftp.lib.ncsu.edu/pub/software/mac/simple-html-editor.hqx. It is in the form of a HyperCard stack; you will need a HyperCard or HyperCard Player as well as a Macintosh.

. . . . . .

<*> In order to perform step 6 you will need an unzipping software such as PKunzip, or if you are using the Macintosh platform, a utility such as Unstuffit will be required to decompress the .hqx file. See chapter 7 on FTP if you are unfamiliar with these utilities.

. . . . . .

And now to actually create a home page, albeit a very simple one. Let's do it.

©SkyLight Paperground Publishing, Inc.

Teacher Exploration #3

1. Load your favorite word processor, or if you loaded the HTML editor or SHE Mac editor, use it to enter the following.
2. `<HTML>`

   This is an *opening tag*.

   `</HTML>`

   Note the foreslash in this *closing tag*. With a few exceptions, all closing tags are duplicates of opening tags with the foreslash added. Everything else you type will go between these two *tags*. This particular element tells your browser that the file contains HTML-coded information.
3. Next, between the HTML tags type:

   ```
   <HEAD>
   </HEAD>
   ```

   The head element identifies the first part of your HTML-coded document, which contains the title. It provides a document identification label for the browser and should not be confused with the title you wish to display on your home page.

   Your script looks like this so far:

   ```
   <HTML>
       <HEAD>
       </HEAD>
   </HTML>
   ```

   Note that the tags are *nested*, which means that the *first* tag opened must be the *last* tag closed. In the above example, you would *not* want to put the `</HEAD>` tag after the `</HTML>` tag because the `<HTML>` tag was opened *before* the `<HEAD>` tag. As this activity continues, you will see how important it is to carefully obey the law of nesting.

©Copyright Teaming and Publishing, Inc.

4. Between the HEAD tags, type

```
<TITLE>This is my home page</TITLE>
```

This is the document identification label referred to above. It is displayed in the browser window (usually at the top), but not within the screen page area. If someone bookmarks your site, this title is what is displayed on their bookmark list. A search engine (see chapter 2) will use this title as a reference to your home page. If you decide to leave the title tags off of your home page, the browser will use the URL of your site as the title. For these reasons, choosing a title that is indicative of the nature of your site is preferred over one that is ambiguous and noninformative.

5. Now, between the </HEAD> and </HTML> tags type

```
<BODY>
    <H1>MY HOME PAGE</H1>
    <H2> This is a test page for learning HTML</H2>
</BODY>
```

Your script should now look as follows. It will not be indented; this was done to demonstrate the concept of the nesting of the tags. Indenting your script will not affect how your home page is displayed, but it may be helpful in keeping track of the tag nesting.

```
<HTML>
    <HEAD>
        <TITLE> This is my home page.</TITLE>
    </HEAD>
    <BODY>
        <H1> MY HOME PAGE</H1>
        <H2>This is a test page for learning HTML</H2>
    </BODY>
</HTML>
```

6. In order to see what your home page looks like so far, save the HTML document you have created as a text or ascii file to a diskette or to your hard drive: A:\, B:\, or C:\ *homepage.htm*. The .htm extension identifies the file as an HTML file for the browser.

©1996 Albion Training and Publishing, Inc.

Figure 5.3 The Home Page So Far on Netscape.

7. Next, fire up your Web browser and open file A:\, or B:\, or C:\ *homepage.htm*. What do you see on your screen? Figure 5.3 shows the home page so far as displayed by Netscape.

   The identifying title, *This is my home page*, appears at the very top of the Netscape screen. Your actual *screen* title, *My Home Page*, was created using the <H1> tag, which printed it as the largest possible header.

8. In order to include an image in the existing HTML code, you can use any .gif or .jpg graphic file you already have. If you don't have a graphic file, one can be downloaded from a site that offers hundreds of public domain images. (See appendix C for directions.) Place your .gif file in the same directory or on the diskette where you have saved your *homepage.htm* file. This is necessary because this is where the browser will look for that file. If you place it in a different directory, the browser will substitute an icon in place of the image you chose to display.

BEST COPY AVAILABLE

9. Insert the following tag between the <BODY> and <H1> tags:

```
<HTML>
    <HEAD>
        <TITLE> This is my home page. </TITLE>
    </HEAD>
    <BODY>
        <IMG SRC="smiley.gif">
        <H1> MY HOME PAGE</H1>
        <H2>This is a test page for learning HTML</H2>
    </BODY>
</HTML>
```

Save your HTML file again after you make the change.

10. Reload the file with the Web browser. What is displayed now? By inserting the image tag before <H1>MY HOME PAGE</H1>, the smiley face image pushes the rest of the text down the page, just as an insertion would advance text in a word processor. Figure 5.4 displays the output of the Netscape screen.

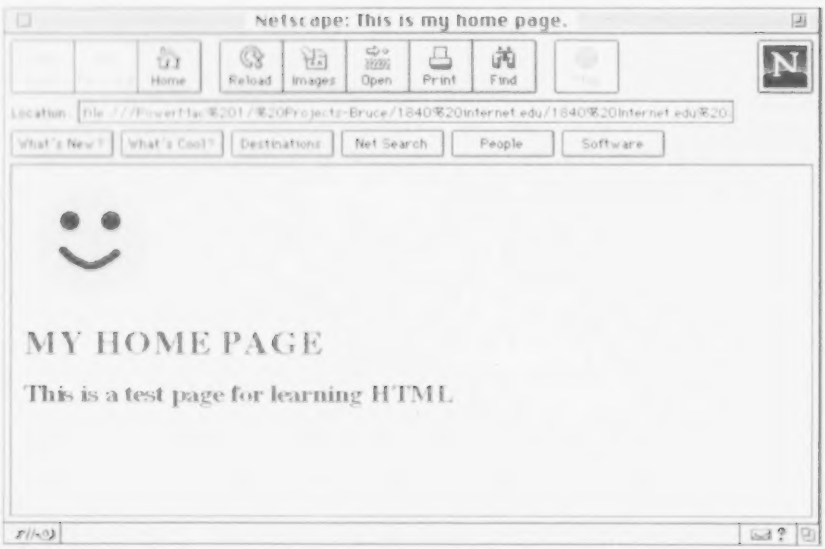


Figure 5.4 The Home Page with a Graphic on Netscape.

© Skylight Training and Publishing Inc.

BEST COPY AVAILABLE

11. The home page can be balanced by moving the text "MY HOME PAGE" to the right a bit. To do this, in the existing HTML script add <CENTER> before and </CENTER> after: <H1>MY HOME PAGE</H1>

    Your script should now look like this:

```
<HTML>
    <HEAD>
        <TITLE> This is my home page.</TITLE>
    </HEAD>
    <BODY>
        <IMG SRC="smiley.gif">
        <CENTER><H1>MY HOME PAGE</H1></CENTER>
        <H2> This is a test page for learning HTML</H2>
    </BODY>
</HTML>
```

12. Save the changes you made to the HTML script. Use the browser to recall your script file, A:\ , B:\, or C:\ *homepage.htm*. Notice the effect that the <CENTER> tags had.

Figure 5.5 The Home Page with Centered Text on Netscape.

BEST COPY AVAILABLE

13. Now move the <H2> label, "This is a test page for learning HTML," to the center of the screen by inserting the <CENTER> and </CENTER> tags as you did with the title. Don't forget to save your changes.
14. Now let's add a link to Yahoo, one of the popular Internet catalogs. A home page would not be a home page without a hypertext link to another site on the WWW. The URL for Yahoo is **http://www.yahoo.com/**.

    After the <H2> heading, type

    ```
    <A HREF="http://www.yahoo.com/">YAHOO</A>
    ```

    This is the simplest type of link.

    Your HTML script should now look like this:

    ```
    <HTML>
        <HEAD>
            <TITLE> This is my home page.</TITLE>
        </HEAD>
        <BODY>
            <IMG SRC="smiley.gif">
            <CENTER><H1>MY HOME PAGE</H1></CENTER>
            <CENTER><H2>This is a test page for learning
             HTML</H2></CENTER>
            <A HREF="http://www.yahoo.com/">YAHOO</A>
        </BODY>
    </HTML>
    ```

15. Save the revised HTML script and access it once again with your browser: A:\ , B:\ , or C:\ homepage.htm. The result should look like the Netscape screen in figure 5.6.
16. Let's finish this activity by making YAHOO stand out a little more and by describing Yahoo for those who are unfamiliar with it. Just before the word "YAHOO" in the HTML script, add the <B> tag followed by the <H2> tag, and just after that add the </H2> and </B> tag. B stands for bold; you already know what <H2> means.

(BCS) Copyright Training and Publishing Ltd.

Figure 5.6 Home Page with Yahoo Link on Netscape.

Your script should look like this:

```
<HTML>
   <HEAD>
      <TITLE> This is my home page.</TITLE>
   </HEAD>
   <BODY>
      <IMG SRC="smiley.gif">
      <CENTER><H1>MY HOME PAGE</H1></CENTER>
      <CENTER><H2>This is a test page for learning
       HTML</H2></CENTER>
      <A HREF="http://www.yahoo.com/><B><H2>YAHOO</H2></B>
      </A>
   </BODY>
</HTML>
```

Figure 5.7 shows the difference these tags make. Note that "YAHOO" is larger and emboldened—the result of adding the <B> and <H2> tags.

BEST COPY AVAILABLE

Figure 5.7 Home Page with Yahoo Enhanced on Netscape.

17. In order to describe Yahoo, add the sentence, "Click on YAHOO to access a superb Internet directory." Type it on the line below the <A> HREF tag using the <H4> and </H4> tags to contain the words. If the <H4> and </H4> tags are not used, plain text will appear on the screen that will be slightly smaller and not as bold compared to the <H4> tag. Advanced HTML programmers can control font size and color with the <FONT> tag. However, this activity keeps things simple.

The completed script should look like this:

```
<HTML>
   <HEAD>
      <TITLE> This is my home page.</TITLE>
   </HEAD>
   <BODY>
      <IMG SRC="ok.gif">
      <CENTER><H1>MY HOME PAGE</H1></CENTER>
```

BEST COPY AVAILABLE

```
        <CENTER><H2>This is a test page for learning
         HTML</H2></CENTER>
        <A HREF="http://www.yahoo.com/"><B><H2>YAHOO</B></H2>
        </A>
        <H4>Click on YAHOO to access a superb Internet
         directory.</H4>
    </BODY>
</HTML>
```

Your finished practice home page should look like the following.

Figure 5.8 The Finished Home Page on Netscape

If you use Mosaic, Internet Explorer, or another Web browser, your practice home page may not match the Netscape displays either. Each browser varies to some degree in how the HTML script is displayed. Minor differences in the presentation of the script commands may appear, as is obvious in the above NetCruiser display.

BEST COPY AVAILABLE

If you are using a text browser such as Lynx, images will not appear and the font sizes will not be differentiated, except for capital letters. Links will be underlined. That means individuals using a text browser to view the home page you created will not be able to see the graphic image. Such views can be accommodated by editing the screen image just slightly.

For example, changing `<IMG SRC="smiley.gif">` to `<IMG SRC="smiley.gif" ALT="Smiley Face">` will not alter the results on a graphic browser, but a text browser will display the words *"Smiley Face"* where the graphic item would have appeared. This addition recognizes the fact that not everybody is equipped with the same hardware and software. It also helps individuals visualize the graphic images their software may not present to them.

* * * * * * *

Your home page is now done! Although it is elementary, it is the first step to creating a home page with all the bells and whistles for your school. Even better, you are now equipped to lead a group of students to create a school home page!

It should be obvious that your practice home page cannot be accessed by anyone on the Web because neither your diskette nor your computer are on the Internet. You need to place your home page on a Web server.

Have someone in your school district set up a Web server. If your school is operating on a LAN or WAN hooked to the Internet, someone should have the expertise to do this.

Design a fantastic home page for your school that highlights the advantages of having a Web server. Show it to the appropriate people and sell them on the idea.

If you are not yet comfortable enough with HTML to do this, set up a demo by going to Web66 and accessing a home page from a school that is already online. The address is **http://web66.coled.umn.edu.**

Alternatively, commercial companies will house your home page for a monthly fee. If your school district already uses a commercial provider as its gateway to the Internet, this is a good option. Most commercial providers make a Web server available to their clients. Check with your service provider.

You may be wondering if there is a benevolent organization out there on the Internet that will let you use their server to post your home page. Wentworth Worldwide Media, a commercial organization that publishes *Classroom Connect* (TM), will post home pages for schools as long as they meet certain specifications. Any school can submit one 8 ½ x 11 page formatted in HTML. One .gif or .jpg image of no more than 50K can be included. If you are willing to work within these limitations, send your HTML script to **classweb@wentworth.com** or send your home page and graphic on a disk to Wentworth, 1866 Colonial Village Lane, P.O. Box 10488, Lancaster, PA 17605-0488. Chances are Wentworth will not provide this service forever; their disk space is limited like everyone else's.

One final alternative to setting up your own Web server is SchoolWeb. It matches schools up with other Internet sites that are willing to donate disk space for the purpose of posting home pages. Contact Andy Carvin at SchoolWeb at **acarvin@k12.cnidr.org**.

These are only temporary solutions; they may not be available for very long, especially as the number of schools that want to publish home pages increases. The ultimate solution, of course, is to get your own Web server.

SEARCHING THE WORLD WIDE WEB

WWW search engines are powered by worms, spiders, and web crawlers. They were referred to in chapter 2. Knowing how to use them will let you efficiently search the Web for information. Since trekking through random links looking for information is not a prudent use of the Web, the next exploration tackles the search for the "needle in the Web haystack."

Chapter 3 recommended Yahoo and AltaVista as the best search engines. After searching the Web in the following activity, you will understand why it is easy to fall "in love with" these two resources.

Teacher Exploration #5

1. Fire up your Web browser and point it to URL **http://www.yahoo.com**.
2. The Yahoo home page contains a place to enter a search string and a button bar that says Search. This simple Yahoo search was used in an earlier activity. Select Options, which is right next to the search button. This will take you to the Yahoo search options page, where a number of search parameters are offered.
3. Suppose a social studies or government class is researching the three branches of the U.S. government. To do a search for information on this topic you would enter *government branches* in the Yahoo search window.
4. Next you must determine which parameters to use. Below is a list of the choices presented, with a brief explanation of each.

The first category of choices is to select a search method. You must decide which one of the following parameters you want applied to your search string.

Intelligent default—Uses the same search parameters as the Yahoo simple search. It will return all sites that contain both of the words.
An exact phrase match—Will return all sites that match the phrase "government branches" in that exact order, not "branches government."
Matches on all words (AND)—This is the Yahoo simple search default. It will return all sites that contain both of the words.
Matches on any word (OR)—This choice will return all sites that contain either word.
A person's name—You would only use this choice if you wanted to look up sites that contain a person's name, such as George Washington.

After selecting one of the above parameters, you must choose from the next category—search area. Two possibilities are offered.

©Teacher Ideas Press

Yahoo Categories—Selecting this option will return only the Yahoo categories that deal with government branches. It is the same as asking for a listing of Yahoo's menuing scheme that deals with the topic.

Web Sites—This option forgoes a list of Yahoo categories and lists only the Web sites that are cataloged on Yahoo that fit the topic.

The next parameter allows you to find new Yahoo listings as of a certain date. This is helpful if you make return visits periodically using the same search string.

Find only new listings added during the past [n days, months, years]—By setting the value of *n* you are able to confine your search to a specific time period. Choices range from one day to three years.

Finally, Yahoo allows you to set the number of returns that will be displayed per screen page. Since the returns are ranked according to a relevancy algorithm, this choice allows you to decide to which relevancy level you wish to descend.

After the first result page, display [n] matches per page—The choices for *n* are 10, 20, 50, or 100 matches.

If you decide to continue your search using one of the search engines listed by Yahoo, the following Yahoo disclaimer is pertinent: "Please note that most of the options selected will not be carried over to other search engines." This simply means that the parameters you have selected are guaranteed to work *only* for a Yahoo search.

Below is a sampling of the many sources (303) that Yahoo returned for the search string using the following parameters.

Exact Phrase Match of
Web sites
Past 3 years
20 matches per page

```
1. Federal Government Branches
2. Government Branches. Federal Agencies
3. Government and Political Resources
4. Poly-Cy Guide to Internet Resources for Political Scienc-
   State Government
5. US Government Agencies and Political Subdivisions
```

In addition to the titles displayed in our sampling, Yahoo also gives the document name, a summary of its contents, and its URL. If the returns that Yahoo gives you are unsatisfactory, the search can be continued using the links to various search engines provided at the bottom of the results pages.

```
Other Search Engines
Alta Vista - WebCrawler - HotBot - Lycos - Infoseek - Excite
- Image Surfer - DejaNews -
```

WORLD WIDE WEB FIELD TRIPS

The following field trips require the use of a graphic Web browser for optimum use. If you are using a text browser such as Lynx, you can still view many of the sites, but without the graphics. Although less appealing, their educational value can still be assessed. Some of the sites, like the frog dissection kit, require the ability to display graphics and are, therefore, useless with a text-only browser.

No attempt has been made to deliberately order the sites according to grade level or subject matter; most of the sites cross grade levels and subject. For example, the White House site is interesting regardless of the age of your students. It is useful not only as a social studies site, but as a language arts site as well. Recommended usage has been indicated for the field trips.

Sites that are enduring as well as with links to other sites have been included. This list of field trips is limited by space; think of it as a set of jumping-off points to hundreds of other excursion of great educational value. An expanded list of field trips in connection with *Internet.edu* is provided at the IRI/SkyLight home page (see appendix F).

As you peruse these WWW filed trips, put on your creative thinking cap and jot down ideas that come to you regarding classroom use. Don't forget to place a bookmark at sites you want to revisit. Any one of these field trips can be a starting point for a classroom lesson.

Field Trip #1

A Virtual Tour of the White House

This worthwhile trip has many possibilities for classroom use.

URL: **http://www.whitehouse.gov**
Browser Needed: graphic or textual
Recommended Usage: lower elementary (with graphic browser); upper elementary through high school (with graphic or text browser)

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. President's Welcome (audio and text). If you don't have online audio capabilities, you can download the audio file and play it with a .wav player.
   b. Vice President's Welcome (audio and text).
   c. Executive Branch. Learn about the role of the executive branch.
   d. First Family. Some personal notes.
   e. Virtual Tours. Graphic browser is best, but the text descriptions of the various attractions are fairly good.
   f. What's New. Current or recent White House events, speeches, press announcements, etc.
   g. Publications. Briefings on topics such as foreign affairs, trade agreements, proposed budget, etc.
   h. Comments. A page where you can leave your name, e-mail address, comments about the White House Home Page, etc.

Classroom Suggestion: Write an e-mail letter to the President using the handy form included here.

© SkyLight Training and Publishing Inc.

Field Trip #2

Online Writing Lab

Visit this source to get a new approach to the traditional research paper.

URL: **http://owl.english.purdue.edu/** (can also be reached by gopher at **gopher://owl.english.purdue.edu**)
Browser Needed: graphic or textual
Recommended Usage: primarily middle school through high school language arts, with research applications in other disciplines as well

Directions:

1. Enter the URL in your browser.
2. Go to the link called `Handouts + Writing Links`.
3. Select `Index of handouts`.
   a. Explore some of the topics and their exercises.
   b. Save the file and print the outline as a reference for your students.
   c. This site has potential for individualizing instruction on various writing skills, grammar, techniques, etc.
4. Return to the home page 1.
   a. Click on the link `Search Tools + Indexes`, where you will find pointers to all kinds of research topics.
   b. Click on `Start your internet based research`.
   c. Coordinate this with the link in the *Index of handouts* called *Writing Research Papers and Citing Sources* for a ready-made plan for teaching students how to plan, develop, and research a topic.

IRI/SkyLight Training and Publishing, Inc.

Be sure to click on the link `Writing help` and "`Writing Labs on the Internet,`" followed by `Online writing labs and centers` for a comprehensive list of one hundred-plus other online writing labs.

Classroom Suggestion: Have your students do a formal research paper using all the resources of Purdue's Online Writing Lab.

Field Trip #3

Frog Dissection Kit

No more hesitation from the squeamish on dissection day!

URL: **http://george.lbl.gov/ITG.hm.pg.docs/dissect/info.html**
Browser Needed: graphic
Recommended Usage: high school biology

Directions:

1. Enter the URL into your browser.
2. Click on the green frog to go to link `Jump into the kit`.
3. Read the directions carefully. You have to see it to believe it!

Classroom Suggestion: After you have done a few dissections, read the directions and try the Virtual Frog Builder Game. It lets you assemble the frog by placing its various parts in the appropriate place. Or use it as a check-up exercise after the students think they have mastered frog anatomy.

©BeSkylight Training and Publishing, Inc.

Field Trip #4

Museum of Paleontology

A fun trip if you have a fast connection and a good browser.

URL: **http://ucmp1.berkeley.edu**

Browser Needed: graphic

Recommended Usage: upper elementary; middle school through high school

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Exhibits
   b. Pictures of prehistoric animals
   c. Fossils
   d. Tree of Life
3. If you are using a slow modem (below 28.8Kbps), check the image sizes before you click on them. The "Exhibits" portion can take some time to retrieve. 56K and T1 lines will move the retrieval along at a more reasonable rate.
4. The textual information is worthwhile. Students can read about paleontology and follow the hypertext links.
5. Click on the link The Subway to connect to a number of other museum sites.

Classroom Suggestion: Display and discuss phylogeny, the Tree of Life, download pictures of prehistoric animals, and gather information about paleontology.

©Skylight Training and Publishing Inc.

Field Trip #5

Theodore Tugboat

(Based on the Canadian TV series)

A fun place to visit with links to other fun places.

URL: **http://www.cochran.com**
Browser Needed: graphic
Recommended Usage: lower elementary (with graphic browser)

Directions:

1. Enter the URL into your Web browser and click on `Theodore Tugboat online activity centre`.
2. Areas for exploration include:
   a. Illustrated interactive story. Students can help Theodore make decisions about what to do next.
   b. Download a page from the online coloring book.
   c. Receive a postcard with Theodore's picture on it.
   d. Parent/teacher review of story synopses.
   e. Links to three hundred-plus other sites of interest to children. Cochran.com has pledged to make this page a jumping-off place for interesting Web sites for children. All sites are previewed and rated.

Classroom Suggestion: Lead students through an initial interactive story with Theodore Tugboat; then turn them loose. Have them report on the variations.

©SkyLight Training and Publishing, Inc.

Field Trip #6

IECC (Intercultural E-Mail Classroom Connections)

This is a must-see site for any teacher interested in establishing links with other classrooms around the world in order to collaborate on projects.

URL: **http://www.stolaf.edu/network/iecc/**
Browser Needed: graphic or text
Recommended Usage: teacher resource

Directions:

1. Enter the URL into your Web browser.
2. Select `About using this page` for a complete description of the following areas:
   a. A suite of four electronic mailing lists. These lists are used to find classrooms for shared e-mail exchanges.
   b. Look through other people's postings for partner classrooms or projects to find something that meets your needs.
   c. Submit your own project announcement or request for a partner classroom.
   d. Subscribe to any (or all) of IECC's lists that sound interesting.
   e. `Related resources` contains many links to other groups doing international e-mail projects, several language resources, and related mailing lists and newsgroups.

Classroom Suggestion: Search the archives for past e-mail projects in order to help you establish crosscultural links with classrooms around the world.

©Skylight Training and Publishing Inc.

Field Trip #7

ROUTEICS

If you are into classroom simulations, this is the site to visit.

URL: **http://ics.soe.umich.edu**
Browser Needed: graphic
Recommended Usage: middle school through high school

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Web ICS (Interactive Communications and Simulations), an adventure learning activity that allows students to participate in simulated situations such as:
      (1) Arab-Israeli Middle East role-playing drama.
      (2) International Poetry Guild, with opportunities for students to publish poetry and receive critiques.
      (3) Earth Odysseys, where participants learn about the world's geographical and ecological diversity, as well as its rich and varied cultures.
   b. Wild Adventures—The Journey North, inspired by the well-known Winter 1994 Run of the World Forum, and Indiana University World School for Adventure.
   c. In addition to the above projects, check out the "Resources for Teachers and Learners," which has an outstanding set of links to other educational opportunities. Follow these links for lots of additional resources.

Classroom Suggestion: Get your students involved in one of the many simulation situations; discuss the variations and implications of their choices.

IRI/Skylight Training and Publishing, Inc.

Field Trip #8

Concertina Story Collection

Concertina, a Canadian Book Publisher, has placed this page on the Web "for your interest and enjoyment." The stories are quite good, with lovely illustrations that have been carefully designed as small graphics files for quick loading. Young students will want to visit this page again and again.

URL: **http://www.iatech.com/books/intro.htm**
Browser Needed: graphic
Recommended Usage: preschool through upper elementary

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include several online stories with pictures, such as:
   a. "Waking in Jerusalem" is a story about a young boy who awakens to the sights and sounds of Jerusalem. Includes sound bytes as well as images.
   b. "I Live On A Raft," by Jerzy Harasymowicz, one of the leading poets of Poland, is a collection of short, haiku-like verse for children.
   c. "My Blue Suitcase" is a delightful story about a well-loved suitcase that travels on its own, describing the concepts of departure, separation, and return.
   d. "Song of Moses" contains interpretations of classic Bible stories.

Classroom Suggestion: Use this story collection as a "reward" site for younger students, eventually rotating the whole class through its selections.

© Sunlight Training and Publishing, Inc.

Field Trip #9

Entomology Resources

This site represents a complete entomological server. A must-see site for advanced biology classes, or a fun site for elementary kids excited about bugs.

URL: **http://www.colostate.edu/Depts/Entomology/ent.html**
Browser Needed: graphic
Recommended Usage: elementary through high school

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Large collection of graphic images (click on `images`).
   b. Movies of various insects (click on `movies`; mpeg viewer required).
   c. Links to other entomological servers—"Entomology on the Internet"—hundreds of links (click on `WWW sites`).

Classroom Suggestion: Download a movie and take advantage of the natural interest young students have in bugs (mpeg viewer required).

© Skylight Training and Publishing, Inc.

Field Trip #10

Lite-Brite Asylum Gallery

Kids who like to create art work will be delighted with this site. Although a little difficult to navigate at first, students will probably learn their way around faster than you will.

URL: **http://asylum.cid.com/lb/lb.html**
Browser Needed: graphic
Recommended Usage: elementary through high school art

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Create your own "lite-brite" picture and submit it to the gallery.
      (1) Select `Edit`.
      (2) Select from colored "pegs."
      (3) Create picture by placing colored pegs in a matrix.
      (4) When the picture is done, click `submit` for a preview.
      (5) `Post` the completed picture to the Asylum Gallery.
   b. Choose `gallery` to view the work of others.
   c. Select `favorites` to see the best of the collection.

Please note: This site has changed URLs about five times in the past two years. If the above URL does not work, go to Yahoo and enter `Lite Brite` as the search string to get the current URL.

Classroom Suggestion: Have students view the work of others and choose their favorites. Compare the class' favorites with those in the "Favorites" collection.

©SkyLight Training and Publishing, Inc.

Field Trip #11

MSU Weather Station

This highly graphic site is the equivalent of having your own weather station. Most images are updated daily; some every three hours. An excellent resource for meteorology units in science classes of all ages.

URL: **http://rs560.cl.msu.edu/weather**
Browser Needed: graphic or text
Recommended Usage: middle school through high school; could be adapted for upper elementary

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. National Weather Summary
   b. Radar and Infrared Composite Images
   c. GOES, METEOSAT, and GMS satellite images
   d. Interactive weather browser, including a clickable U.S. map
   e. Movie images (MPEG)
   f. Gif or JPEG images—your choice (smaller files with JPEG)
   g. A link to Netscape, where you can download helper applications to view the movie images
   h. A text-only version is available

Classroom Suggestion: Make the MSU Weather Station the center of a unit on weather and use its many resources to help students understand what factors contribute to weather.

Field Trip #12

Starchild Project

This site has an interesting feature—links that allow you to select a difficulty level. Level I is easy to read and elementary while Level II is more advanced. This is another quality NASA site.

URL: **http://starchild.gsfc.nasa.gov**
Browser Needed: graphic or text
Recommended Usage: K-12; adaptable depending on teacher approach

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include solar system, universe, and space stuff.
3. For example, select `Solar system [Level I]`.
4. Browse the hyperlinks. Note the interactive Quizzes at the end of each.
5. Select `Solar system activities`.
6. Try the interactive solar system game called "Where, Oh Where Does That Little Planet Go?"

Classroom Suggestion: Have your class visit Starchild periodically to participate in the various interactive learning activities.

(R)SkyLight Training and Publishing, Inc.

Field Trip #13

Music Education Resources

This home page for music educators is maintained by Cynthia Shirk of the Mankato Public Schools in Minnesota. It appears to be a very comprehensive source for music educators. See what you think.

URL: **http://www.isd77.k12.mn.us/resources/staffpages/shirk/k12.music.html**
Browser Needed: text or graphic
Recommended Usage: Music educator resource

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. sites for band teachers, orchestra teachers, choral/vocal teachers, classroom music teachers, and all music educators
   b. student MIDI sequences
   c. links to biographies and works of the great composers
   d. link to music newsgroups
   e. link to commercial music resources listing
   f. Beatles Online

©SkyLight Training and Publishing Inc.

Field Trip #14

U.S. Congress Thomas Web

No government class with access to the Internet should be without this timely resource, which keeps you abreast of what is going on in Washington. It is named after Thomas Jefferson.

URL: **http://thomas.loc.gov/**
Browser Needed: graphic or text
Recommended Usage: middle through high school; could be adapted for upper elementary

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. House and Senate bills searchable by key words or bill number
   b. Full text of the *Congressional Record*
   c. Hot legislation
   d. How Our Laws are Made
   e. Links to legislative Gophers and an e-mail directory for the House and the Senate

Classroom Suggestion: Start a project tracking the progress of various Congressional bills that have a direct impact on students' lives.

Field Trip #15

The Hub

This is an important science/math site with many links, projects, and resources. A must-see for science and math educators.

URL: **http://ra.terc.edu/HubHome.html**
Browser Needed: graphic or text
Recommended Usage: middle school through high school; could be adapted for upper elementary

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include math and science resources, projects, and lesson plans.
3. Click on `Alliance resources.`
4. Click on the link `Mathematics` and explore the assorted resources.
5. Next, return to the home page and click on `Science`. Explore, but be selective. There's a lot here.

Classroom Suggestion: Select any of the resources and lesson plans and try them with your class. For example, the Columbia Education Center has a collection of lesson plans across grade level and curriculum content. "The Globe Project," listed under science, lets schools and students participate in research on the global environment.

©SkyLight Training and Publishing, Inc.

Field Trip #16

Franklin Institute Science Museum

Hot links are the feature of this site!

URL: **http://sln.fi.edu/**
Browser Needed: graphic is your best bet
Recommended Usage: K–12

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Virtual exhibits
   b. Educational hotlist
   c. Virtual exhibit hotlist
3. Click on `Educational Hotlist` and explore the many links to great projects from around the globe.
4. Go back to the home page and click on `Fistfuls of Favorite Websites`. Select `Interactive Tour of the Cell` for an interesting tutorial with many graphic features.
5. Go back to the home page and explore:
   a. `Inquiry Almanack`, an online monthly newsletter
   b. `World Wide Web Workbook`, a beginner's guide to the Web
6. Back home again, be sure to look at `Units of Study` and `Science Programs & Demos`.

Classroom Suggestion: *Interactive Tour of the Cell* is a great site to take a science class for all the basics about cells. Its interesting pictures and animation are sure to stimulate student interest.

IRI SkyLight Training and Publishing, Inc.

Field Trip #17

Berger Foundation Art Treasures

This site lets you examine the great art treasures of the world without leaving the classroom.

URL: **http://sgwww.epfl.ch/BERGER/foundation.html**
Browser Needed: graphic is a must
Recommended Usage: high school art with limited application for K–8 art

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. High resolution art treasures from around the world
   b. Several programs currently reside on the server
3. Click on `World Art Treasures` followed by any program at the right side of the page.
4. A tackboard of art images is presented. Click on the image that interests you.
5. Click on `Zoom` to see a larger reproduction.
6. Return to the home page to take a different tour.

Classroom Suggestion: Use the many resources of this site to explore the question "What makes great art?" with art appreciation and regular art class students.

IRI/SkyLight Training and Publishing, Inc.

Field Trip #18

The Comic Strip

This daily cartoon page is just what you might expect—lots of cartoons. Although a "strictly for fun" page, creative educators may come up with a lesson plan built around Dr. Fun.

URL: **http://www.unitedmedia.com/comics**
Browser Needed: graphic
Recommended Usage: decide for yourself after viewing it

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Comic Strips, including Nancy, Peanuts, and Marmaduke (click on `The Comic Strip`)
   b. Cartoons, mostly editorial (click on `The Inkwell`)

Classroom Suggestion: Investigate humor or the political cartoon as an element of societal change.

IRI/SkyLight Training and Publishing, Inc.

Field Trip #19

The Field Museum

The Chicago Field Museum has provided a valuable public service with this Web Field Museum. The project is experimental; let's hope the museum decides to continue its presence on the Web. This first attempt is spectacular!

URL: **http://www.bvis.uic.edu/museum**
Browser Needed: graphic
Recommended Usage: elementary through high school

Directions:

1. Enter the URL into your Web browser.
2. Areas for exploration include:
   a. Exhibits—since this is a dynamic site, exhibits will vary from time to time just as in a real museum
   b. Education—materials for educators
   c. Science—links to other sites of scientific interest
   d. Public Information—museum information for residents of and travelers to the Chicago area
3. Take a tour of one of the exhibits and note the balance between beautiful illustrations and textual material.
5. Check out the icons at the bottom of the page. Here you will find links to various organizations that have presented awards to the Field Museum site. Other links, such as `Surfing the net with your kids`, are educational.

Classroom Suggestion: Develop a brochure of what is available online at this site and add it to your class or school home page, if you have one.

IRI/SkyLight Training and Publishing, Inc.

Field Trip #20

IRI/SkyLight

A resource of many additional sites to preview and browse.

URL: **http://www.iriskylight.com**
Browser Needed: graphic or text
Recommended Usage: teacher resource

Directions:

1. See appendix A to access the IRI/SkyLight site and the list of *Internet.edu* links.
2. Review the ones that look interesting and enjoy!

Classroom Suggestion: Develop lesson plans around some of the sites found here. For example, one fun site with many learning opportunities is *Yahooligans*, found at **http://www.yahooligans.com**. Take your students on an online tour of the United Nations or join the forum called *Voices of Youth*.

Classroom Activity #1

1. Help your students create a home page for your classroom. This can be done individually, in cooperative groups, or as a class project. Combine the efforts of all students when choosing the best design and ideas.
2. For lower grade levels, explain the basics covered in this chapter.
3. For upper grade levels, download a collection of graphics (see Appendix C) and explore advanced HTML. You will need a good book on HTML for this, which you probably already have if the home page creation activity sparked your interest.
4. If your school has a Web site, ask the Web master to put your classroom home page on it.

5. If you don't have a Web site, put the home page on a diskette and distribute one to each classroom teacher who might want to use the practical features you have included, such as links to interesting sites. Remember, it does not matter where the home page exists. As long as you are online when you use it, all links will be fully operational.
6. As your class makes changes to the home page, distribute the updated diskettes. Although this is not an ideal situation, it is better than nothing if you do not have a Web server.

Classroom Activity #2

1. Assign students a research topic, or let them pick their own.
2. Have them perform a Yahoo search on their topic and then proceed to AltaVista, as well as some of the other search engines (see Teacher Exploration #5).
3. Initially, have them gather lists of sites that appear to be highly relevant to their topic. Explain the relevancy scores on the search engines.
4. If your school uses Netscape, have students pull information off a Web site by "cutting and pasting" it from the site to their word processor. (The cut-and-paste feature of Netscape is invoked by left-clicking the mouse and dragging it across the desired information. Once it is highlighted, go to *edit* and *copy* the information just like you normally would in your other PC or Mac applications.)
5. Have the students print a report of their preliminary findings and discuss them. Suggest a few sites to visit and gather information for their informational report. (Cut and paste can be used in this process as well.)
7. Be sure to discuss copyright and plagiarism issues before the students start cutting and pasting.
8. Have students prepare oral or written reports summarizing their findings.

(R) SkyLight Training and Publishing, Inc.

CHAPTER

6

GOPHER

When most people think of the word *Gopher*; they conjure up an image of a prairie dog poking his head up through a hole in the ground and looking around, with his paws hanging limply in front of him. Most of us don't know much about the Gopher or its habits. However, a little knowledge about its life style goes a long way toward understanding why the computer pundits at the University of Minnesota (UM) named this Internet tool after the state's mascot.

Gophers build intricate interconnecting tunnels that link their underground burrows. This subterranean honeycomb is created as they search for food, such as tubers and roots. The Internet Gopher's characteristics are analogous to this practice of tunneling more so than to any other feature of this interesting animal.

Those already familiar with Internet "Gophering" know that every Gopher site is connected to thousands of other Gopher sites. Herein resides the power of the Gopher. Although Gopher space is vast, each site is accessible through the linking *tunnel* structure. It is even possible to search the entirety of Gopher space using a tool called *Veronica*.

Because Gopher clients and servers are designed to "talk" to each other, ordinary telnet cannot be used to access a Gopher. If telnet is your only way to access the Internet, you will need to communicate with one of the few Gophers that are specifically designed to be accessed by telnet. What happens here is that you end up using a public Gopher client provided by the Gopher you are accessing via telnet.

For example, telnetting to **panda.uiowa.edu** accesses the Gopher client and the server simultaneously. You can then access almost any Gopher worldwide from this site. However, the few sites that still offer this service all recommend getting your own Gopher client. No doubt this type of service will soon be a thing of the past. If your school does not have a Gopher client, consider getting one of the many integrated packages available commercially, such as Netscape or Internet Explorer, or some of the shareware and public domain clients available via FTP. Another reason to get your own client is that a public Gopher client has limited features. For example, the luxury of a permanent bookmark file is not available with a public Gopher client. When you sign off from a public Gopher client, your bookmarks for that session are gone.

In addition, it is very disconcerting to have a public client disappear, leaving you "holding the bag" and unable to access the remote locations you are used to accessing. When my primary way of getting around the net was telnet, I used a public Gopher client at Washington University, St.

(R)SkyLight Training and Publishing, Inc.

Louis, (**library.wustl.edu**) for about a year. One day it was gone, and I had to find other ways to access my favorite Gophers.

Although I considered providing telnet access paths for some of the activites for those with minimal Internet access, I opted not to because the continued existence of these paths cannot be guaranteed. However, the following two Gophers will accept telnet access as of this printing: **panda.uiowa.edu** and **Gopher.msu.edu**. Both of these Gophers have links to all other Gophers; but don't count on them being around very long. The day is rapidly approaching when everyone on the Net will assume that everyone else has the commonly available Internet tools—telnet, Gopher, WWW browser, etc. Public Web browsers and Gopher clients will soon be a thing of the past. If your school does not have full Internet service now, it would be wise to take steps in that direction very soon.

The following activity introduces the *mother* of all Gophers, the Gopher at the University of Minnesota. It also demonstrates the powerful searching capability of Veronica.

Teacher Exploration #1

1. Gopher to **Gopher.tc.umn.edu** and peruse the main menu.

```
Information About Gopher
Computer Information
Discussion Groups
Mailing Lists
Fun & Games
Internet file server (FTP) sites
Libraries
News
Other Gopher and Information Servers
Phone Books
Search Gopher Titles at the University of Minnesota
Search lots of places at the University of Minnesota
University of Minnesota Campus Information
```

(R) SkyLight Training and Publishing, Inc.

BEST COPY AVAILABLE

Although this menu is similar to the main menu presentation found on most Gophers, if you have seen one, you haven t seen them all! Each Gopher offers unique information. If you worked through the chapters in this book in order, you have already explored this Gopher in chapter one. If you did not, peruse the submenus to get a feel for this Gopher.

2. In order to look at the tunneling system built into nearly every Gopher, go back to the main menu and select

```
>Other Gopher and information servers
```

The following submenu appears:

```
All the Gopher Servers in the World
Search All the Gopher Servers in the World
Search titles in Gopher space using veronica
Africa
Asia
Europe
International Organizations
Middle East
North America
Pacific
Russia
South America
Terminal Based Information
WAIS Based Information
Gopher Server Registration
```

The least valuable menu choice is the first item. It will give you an alphabetical listing of all the interlinked Gophers in the world. You will literally have to scroll through one hundred-plus screen pages of Gopher listings. Try it anyway and tunnel to a couple of the other Gophers on the list. Notice how you are almost instantly transferred to the Gopher server you selected. Everything takes place seamlessly the commands to access the chosen Gopher are executed in the background without your involvement.

IRI/SkyLight Training and Publishing, Inc.

The easiest way to access other Gophers is to know where they are located geographically. For example, I know that Wheaton College is in Illinois and that Albion College is in Michigan. Knowing this, accessing their Gopher servers becomes the rather simple task of zeroing in on the state in which they reside.

3. Select

```
>Other Gopher servers
>North America
>Illinois
```

This quickly leads to a listing of Gopher servers unique to Illinois—much simpler than wading through *All Gopher Servers in the World*.

4. Try locating the following Gophers by using the menu selections on the UM Gopher:

a. Cambridge University Gopher
b. U.S. Senate Gopher
c. Harvard University Gopher

• • • • • • • •

Now that you have seen how to tunnel to another Gopher, let's explore how to harness the power of Gopher. A powerful searching tool called Veronica is available on nearly every Gopher server. To be more precise, the capability to search Gopher space is offered on nearly every Gopher. In reality, the home Gopher hands off the Gopher search to one of several Veronica servers that exist specifically for this purpose. As you work through this activity you will see how to access the Veronica server of your choice, or have it done for you by Veronica through automatic selection of an available server, which is sometimes the best way to go. (If you are familiar with Veronica and Jughead searches, you can skip ahead to Teacher Exploration #5.) Although the UM Gopher is used once again, the process is similar with any Gopher you select.

© Skylight Training and Publishing, Inc.

Teacher Exploration #2

1. Gopher to **Gopher.tc.umn.edu**.
2. Select:

```
>Other Gopher and Information servers
>Search titles in Gopher space using Veronica
>Search all of Gopher space using Veronica
```

The following menu will appear:

```
Find GOPHER DIRECTORIES by Title word(s) (via PSINet)
Find GOPHER DIRECTORIES by Title word(s) (via UNAM)

Frequently-Asked Questions (FAQ) about Veronica - January
  13, 1995
How to compose Veronica queries - June 23, 1994
More Veronica: Software, Index-Control Protocol, HTML Pages
Search GopherSpace by title word(s) (via PSINet)
Search GopherSpace by title word(s) (via UNAM)
Simplified Veronica chooses server - pick a search type:
      Simplified Veronica: find Gopher MENUS only
      Simplified Veronica: find ALL Gopher types
```

3. Select:

```
>How to compose Veronica queries
```

Although this will guide you through a Veronica search, scanning the help article is suggested if your experience with Veronica is limited.

After scanning the help article, attempt a Veronica search. Select any Veronica server you wish, but standard practice is to choose one that is close to your geographical location.

Note that in the menu above, the searching sites are subdivided into two categories—Gopher directories and Gopher space. In the first instance the search concentrates only on menu titles. The latter

BEST COPY AVAILABLE

©Copyright Training and Publishing, Inc.

focuses on the titles of any documents located in Gopher space in addition to menu items. You must decide which type of search to use.

4. Find the Veronica server nearest you. Then select either:

```
>Find Gopher directories by title words
```

or

```
>Search Gopherspace by title words
```

You may have trouble connecting. If you think that another Gopher will have a bigger and better list of Veronica servers, don't waste your time looking. That is not the case. This is a complete list of all the Veronicas available worldwide and is duplicated on any Gopher that offers Veronica searches. As you might expect, supply and demand is an issue; sometimes you just have to wait.

5. Select:

```
>A different Veronica server
```

You may still have trouble connecting; everyone else may be looking for a free server, too.

If you are searching at a busy time of day, one option is to do a simplified Veronica search.

6. Select:

```
>Simplified Veronica search
>Gopher menus
```

or

```
>All Gopher types
```

Using this search mechanism enlists the help of a special computer that will scan the available Veronica servers for an opening. If it finds one, it will connect you.

Whether your connect experience is quick or slow, it is sure to be different the next time you attempt it. If you had to try several times over the course of fifteen or twenty minutes, don't be discouraged and shy away from Veronica in the future. On the other hand, if it

was easy sailing, don't assume a repeat performance. Veronica has many suitors.

The following approximates what you will get when you connect to a Veronica server.

```
Enter search string:_____________________
```

8. Let's do the simplest possible type of search.

   Select one of the search words listed below and see what Veronica finds. (Each of these social issues should have lots of information available in Gopher space.)

   abortion

   capital punishment

   Social Security

9. What was the result? Notice that your information is returned as a menu of choices.

   Here are just a few of the hundreds of items that were returned using the search string *Social Security*.

```
My Social Security Number: How secure is it?
Buchanan Set to Address Forum on Social Security
Social Security Number: Determining place of issuance by
  number
Update on Social Security
What about Social Security?
Social Security's Future
Social Security Number Information
Social Security Numbers: How they are issued
```

10. Select one of the menu items from the list. What happens? You are seamlessly transferred to the Gopher site that contains the source of the information you selected. This hypermenuing system is very powerful and could be referred to as the *Gopher equivalent of WWW hypertext*.

11. Return to the menu of returns that Veronica presented to you. Follow the directions at the bottom of the screen. Notice how powerful this research tool can be when used in connection with a bookmark. You can skip what is irrelevant and bookmark what is relevant for later visits.

• • • • • • • •

Boolean searches can make Veronica even more useful. They work the same way a simple search does, but the researcher can structure the search a little more carefully. Using the operators AND, OR, and NOT focuses a Veronica search.

For example, a search using the words *Congress* AND *Social Security* directs Veronica to find all resources that contain *both* expressions. If the operator OR is used, Veronica is directed to search for resources that contain *either* expression. Using the NOT operator excludes documents that contain an unwanted word. *Congress* AND *Social Security* NOT *taxes* results in the same return as *Congress* AND *Social Security* but excludes any document that makes a reference to taxes. The use of various combinations of these operators will narrow or broaden a search according to your needs. If this is still confusing, review the help section on Boolean searches referred to below.

Teacher Exploration #3

• •

1. Gopher to **Gopher.tc.umn.edu**.
2. Select

   ```
   >Search titles in Gopher space using Veronica
   ```

   The menu indicated in Exploration #2 will appear.
3. Select:

   ```
   >How to compose Veronica searches
   ```

Look for the section that discusses Boolean searches and read it thoroughly before continuing.

4. Try the following search strings using various Boolean operators or combinations of operators.

   United States
   government
   politics

   For example, what does the following search string return?

   United States *and* government

   You should get returns that contain both expressions. Can you predict the return for the following?

   government *not* politics

   Veronica eliminates any resources that contain both the words government and politics.

5. Try several other combinations until you are comfortable with a Boolean search and can predict what the returns are likely to be.

• • • • • • •

The next activity focuses on Jughead, Veronica's close friend. It performs the same task but limits a search to *one particular Gopher site*, which makes it easy to determine what is available on that particular Gopher. Jughead is available on many Gophers.

©SkyLight Training and Publishing, Inc.

Teacher Exploration #4

1. Gopher to **Gopher.itd.umich.edu**.
2. Select:

```
>Search all menu titles at U of Michigan
```

3. The following menu appears:

```
>About Jughead
>Search all U of M menus using Jughead
```

4. Select Search . . . and enter the same search strings used in the last exploration: United States, government, politics. Note that a limited list of menu items is returned for each of these strings. Compared to the items Veronica retrieved in the previous activity, this is a tiny list. This is because Veronica searched all of Gopher space while Jughead searched only the Gopher located at UM.

By now you are probably wondering what education Gophers are available. If you worked through Teacher Exploration #1 you already know how to find such a list. Let s practice what you learned and ask Veronica to find the information for us.

Teacher Exploration #5

1. Gopher to **Gopher.tc.umn.edu** or your favorite Gopher.
2. Select:

```
>Other Gopher and Information servers
>Search titles in Gopher space using Veronica
>Simplified Veronica: Find Gopher MENUS only
```

3. Enter `education Gophers` as the search string. Is the list of returns long enough for you?
4. Zero in on the K–12 education Gophers and start exploring. What looks interesting?
5. In order to see what sort of return a search of all the titles in Gopher space would yield, return to the Veronica menu and select:

   `>Search all of Gopherspace using Veronica`

6. Use the same search string, `education Gophers`, and see what you get. The result is basically the same list, with a few additions. The additions are documents that could not be returned with a menu-only title search. Explore some of them.

• • • • • • •

Since the list of education-related Gophers is overwhelming, a starter list of the most widely recognized Gophers containing resources of exceptional value for K–12 educators is provided below. In order to create your own list of helpful Gophers, start with this annotated list and add to it. This list of Gopher sites could have been longer; it is just one possibility. Everyone places different value judgments on these sites. You will probably find favorite Gopher sites on your own that were not included on this list.

. . . . . .

Please note: The following Gopher addresses have been cited in the URL form for access with a Web browser (gopher://... etc.) If you are using a Gopher client, just drop the gopher:// from the URL and what remains of the URL will be the address the Gopher client needs.

. . . . . .

(R) SkyLight Training and Publishing, Inc.

A Starter List of Educational Gophers

AskERIC **gopher://ericir.syr.edu**
Best known as a resource for lesson plans across the curriculum and an e-mail question-and-answer service for educators and students, Eric has expanded over the years and offers a multiplicity of services.

Best of K–12 on the Internet **gopher://informns.k12.mn.us:70/11/best-k12**
A deceivingly simple alphabetical menu of many interesting sites focusing on expeditions and animal study sites.

Blacksburg Electronic Village **gopher://crusher.bev.net:70/11/Schoolhouse**
Perhaps the best known cooperative Internet venture in the United States, formed between Virginia Tech, Bell Atlantic of Virginia, and the town of Blacksburg, Virginia. Its *Village Schoolhouse* contains unusual links such as the *Seaworld/Busch Gardens Animal Database*, as well as the more traditional subject-oriented *Study Carrels*.

Children's Literature—Electronic Resources **gopher://lib.nmsu.edu:70/11/.subjects/Education/.childlit**
A part of the New Mexico State University Library Gopher, Children's Literature is designed as a source of electronic information of interest to children's literature professionals. It also contains links to a substantial number of online texts of famous children's literature.

CICNet Gopher (Committee on Institutional Cooperation—a Big Ten Organization) **gopher://gopher.cic.net:3005/11/**
A jumping-off site to many educational resources. Its *Classroom Activities and Projects* menu item is especially valuable.

Department of Education OERI (Office of Educational Research and Improvement) **gopher://gopher.ed.gov**
An educator site dedicated to developments in education and educational issues.

Kidlink **gopher://global.kidlink.org/**
A grassroots project aimed at getting as many children (age group 10-15) as possible involved in a global dialog. Runs yearly KIDS projects. (See chapter 4, Teacher Exploration #5.)

Library of Congress Gopher **gopher://marvel.loc.gov:>0**
The LOC education collection, among other things, can be found at this site.

continued on next page

©SkyLight Training and Publishing, Inc.

BEST COPY AVAILABLE

SchoolNet Gopher **gopher://gopher.schoolnet.carleton.ca/**
Canada's SchoolNet is designed to introduce students and teachers to the Internet, as well as make national and international resources available to them. An excellent gopher site.

TENET Gopher **gopher://gopher.tenet.edu/**
The Texas Educational Network Gopher is worth visiting just for its field trips. It has many other attractions.

Please note: Many Gophers are in transition. Their system administrators are looking seriously at moving to a WWW platform to present their information. Some of these Gophers may not remain active or up to date because of the resources needed to continue multiple-access platforms.

Classroom Activity #1

1. Have the students access any Gopher.
2. Conduct Veronica searches of Gopher space using words suggested by the students.
3. Proceed to Classroom Activity #2 after students are familiar with simple one-word Veronica searches.

Classroom Activity #2

1. Gopher to any Gopher.
2. Have students investigate `How to compose Veronica queries`.
3. Discuss Boolean searches using the information from the help document.

BEST COPY AVAILABLE

©1995 Skylight Training and Publishing, Inc.

4. Discuss Boolean operators using combinations of words such as:
   a. music
   b. music AND rock
   c. music OR rock
   d. music NOT classical
5. Have students predict the search results.
6. Have the students actually conduct the Veronica searches using the various Boolean combinations and compare the results. The search results can be saved as files and printed out for direct comparison.

Please note: The Boolean combinations used above should produce certain hypothetical results. Actual search returns may not fully agree with predicted returns due to Gopher information limitations. Nevertheless, a close correlation will be obtained. For example, "music and rock" should return listings that contain both words. Returns dealing with rock music are expected. However, listings dealing with other topics will also be returned. The only requirement is that the document contains both words. Thus, you might get a return entitled "Rock Hounds and Music Lovers."

Classroom Activity #3

1. Have students do a Veronica search using all of Gopher space and compare it with a Jughead search using the Gopher location at **Gopher.tc.umn.edu**.
2. Visit several Gophers and do Jughead searches of those Gophers using the same search string.
3. Note the similarities and differences of the results. This activity highlights the uniqueness of each Gopher.

©1994 IDG Training and Publishing, Inc.

Classroom Activity #4

1. Assign a research topic or have the students suggest one.
2. Send half of the class to the library to do the research. Have the other half of the class use Veronica searches of Gopher space.
3. Then, using a new research topic, reverse the methods used.
5. Compare the kinds of information available.

Please note: Research information obtained through Veronica can be saved as files and merged with a word processor. Information can then be cut and pasted into an orderly arrangement. Instruct your students as needed.

Classroom Activity #5

1. Have students access any Gopher, and show them how to use Jughead as a quick tool to find information.
2. Give the students several search strings and have them search specific Gophers for information related to these search strings.
3. Compare the results.

IRI SkyLight Training and Publishing, Inc.

Classroom Activity #6

1. Have students visit any Gopher site and access
   `>Other Gopher servers.`
2. Instruct them to identify and find information about a favorite Gopher server from each continent.
3. Have the students share their findings with the entire class.

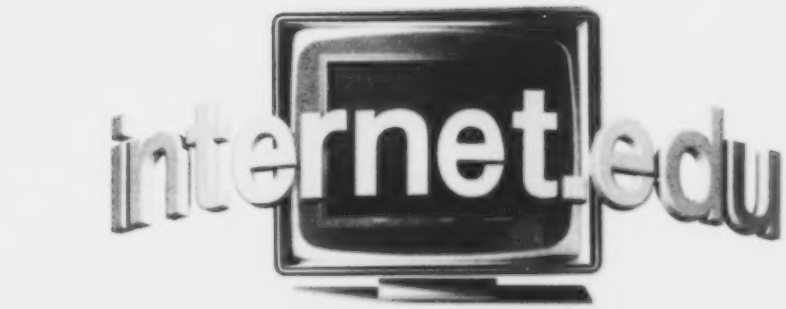
Classroom Activity #7

1. Use the starter list of Gopher sites as a research assignment for your students.
2. Instruct them to visit various sites, explore, and report back to the class which sites they liked and the features that attracted them. Set the criteria they should use to judge the sites and features, such as learning value, interest level, relationship to classroom curriculum, etc.
3. Have them bookmark the most interesting sites. Develop a classroom list of neat Gopher sites to visit.
4. Add to the list each year and publish it for students. If your class or school has a Web page, establish links to these sites.

IRI/SkyLight Training and Publishing, Inc.

CHAPTER

7



FTP–TRANSFERRING FILES ON THE INTERNET

On a number of occasions I have walked into the school office and asked for an expense account form. To my chagrin, the secretary is never able to find it. After a five-minute discussion about the purpose of the form, she suddenly replies, "Oh, you mean a conference expense worksheet!"

This problem is inherent to all file-keeping systems and is greatly intensified with anonymous FTP on the Internet. (*Anonymous* is the term used to identify FTP sites available for public use as well as the login used to access a public FTP site.) Let's visualize the FTP challenge. Imagine walking into a huge three-story warehouse filled with file cabinets knowing only that what you want is *probably* there. How do you find it? Have all the file cabinets been arranged by the same person with the same kind of file management scheme? Is the management scheme the one you would have used? Probably not. So where do you begin? Are you even in the right part of the warehouse? Would you quickly give up and slam the warehouse door shut in exasperation?

With FTP, the process of finding the files you want is as important as the file itself. If you don't find it, you can't download it! In addition, the end result of an FTP session is unlike the end result of a gopher or WWW session. You don't get a set of links to somewhere else on the Internet or a software demo file printed to your screen. Once you find the file you think you want, it has to be downloaded. It may be a piece of software or it may be an encoded document such as a .zip or a .sit file. In any case, you have to get it to your machine and run it or read it to see if it is what you thought you wanted. Only then can its ultimate usefulness be determined.

Fortunately, part of the solution for expediting FTP is settling into place as the Internet continues to evolve. The world of "old-fashioned" FTP is quickly fading into the past. What is meant by old fashioned is the kind of FTP that was utilized by taking control of a remote Unix server and manipulating it from the command line. Anyone unfamiliar with Unix commands could do nothing more than stare at the cursor while it stared back, waiting to "hear" something intelligent. If you knew the Unix commands, it was still extremely cumbersome, and time consuming, to "browse" an FTP site for available files.

A typical FTP visit involved navigating the directory structure, downloading the readme file from the directory, exiting the FTP site, reading the readme file with a word processor, going back to the FTP site, and downloading the desired file. This assumes you found it on the first try, which was often not the case. Then the process had to be repeated again.

©Skylight Training and Publishing Inc.

Add to this the fact that you had to remember to set the transfer mode to binary or ascii, whichever was appropriate. (Binary mode is used to transfer software, graphic files, and other non-textual files. ASCII mode is used to transfer textual material.) If this was not done, you got a pail of garbage when you downloaded the file. The result? Start all over again and do it right.

By comparison, today's Internet navigator has it easy. Most of the large FTP sites can now be accessed via Web addresses or at their normal site address with an FTP client, where you can browse directories and download to your heart's content without giving one direct Unix command. All you need to do is to point and click. The Unix commands are all there—you just don't see them. In case you only know the partial name of a file you want, Archie, an FTP search engine, is right there to help (for Web sites only). In the past you had to leave the site and telnet to a special Archie site to enter your search string. Now the hot link takes you there immediately. Furthermore, document files in the .txt format can be displayed by your Web browser for examination before you decide to download them.

Since the FTP medium is presently gravitating away from the Unix command line and rapidly becoming fully integrated with Web browsers, Internet writers need to resolve how to address their audience. Some of you have been "brought up" on Web browsers, and Unix sounds like a mythical animal with one horn on his head. Others have come up through the Unix school of hard knocks like I have and know exactly what I am talking about. Still others of you are clinging frantically to Unix because you finally learned your way around, and you feel comfortable with it. Others of you have graduated to an FTP client. So how do I present this chapter on FTP? *I have decided to opt for the future.*

Although Unix will probably be the underlying operating system on many Internet servers for a long time to come, you will not need to know its command language. What is currently happening between Unix and cutting-edge browsers like Netscape is pretty much the same as what happened during the "war" between the DOS and the Windows environments. Users resisted initially, but with improvements, the GUI (graphical user interface) became too friendly and powerful to resist. Today a continuing transition is taking place between Windows 3.1 and increasingly powerful versions of Windows 95.

The basic problem faced by File Transfer Protocol users is how to *download*, or get a file from a remote host to one's computer? Its corollary,

©McGraw-Hill Training and Publishing, Inc.

uploading, is of less interest to most people. *It is assumed that you understand the download process;* the upload process will not be covered. If your Internet experience stops short of FTP, use the first exploration as a tutorial; all file retrievals are done in basically the same way. After completing the activity, you will be equipped to FTP from any site.

Finally, with an eye to the future, all of the FTP activities will use a Web browser. An FTP client is satisfactory, but in most cases the browser has distinct advantages over the client, primarily ease of use. Although each browser or client has its own idiosyncrasies, they all use the same underlying principles of file transfer. As a result, only minor variations in the directions are given for each exercise. However, if you are stuck with old-fashioned FTP, get a good book on basic Unix commands. In addition, you will need to borrow an older book on the Internet that explains how to FTP from a command line platform in order to successfully carry out the downloads included in this chapter.

The first download starts at a very practical level that should not be overlooked. All FTP files are a potential source of disaster. Why? Viruses! Software repositories try their utmost to prevent the intrusion of viruses into their files. Nevertheless, no FTP site on the Internet can absolutely guarantee that its files are virus-free. You have to provide that guarantee yourself. One way is to use a diskette for downloading whenever possible. That way the downloaded file is isolated to the diskette until it can be checked for viruses. The following activity retrieves a very practical piece of software and provides an introduction to the FTP process for those who need it. Let's get on the Net and FTP a virus protection software.

©Copyright Teaching and Publishing, Inc.

Teacher Exploration #1

1. Point your Web browser to the following site: **http://www.shareware.com**.
2. This is an excellent starting point for scanning the FTP software world to find what you want.
3. A number of button bars are presented. Click on `Quick Search`.
4. Enter `virus` in the search field and set the option menu to Windows, Windows 95, DOS, or Mac—whatever is appropriate for your machine. *Win (all)* was used here.
5. Scan through the described softwares. You are looking for McAfee's *Virus Scan for Windows*. It is listed as *uvs-227e.zip*. (DOS and Mac users, see note below.)
6. Crucial information about the file is listed:
   file size 599K
   file date Nov. 13, 1995
   path: virus/
   McAfee's Virus Scan v. 2.2.7 for MS-Windows

   The information you see, including the file name, date, and version, may vary slightly.
7. Next, click on the software filename, *uvs-227e.zip*, which is a highlighted link.

Mac users, please note: Although McAfee's *VirusScan* is now available for the Mac, many other virus packages are also available. One is a freeware virus detection software called Disinfectant 3.6, which can be obtained by using the search string virus under the Mac platform of this site. The file name is *disinfectant-3.6.sit.hqx*.

DOS users, please note: Follow the Windows procedure outlined above, but choose the DOS platform in step 4. The file name is *scn-250e.zip*—McAfee's VirusScan 2.5.0 for DOS. VShield McAfee's antivirus TSR is also available—*vsh-250e.zip*

8. A list of FTP sites from which the software can be downloaded is provided. These sites are rated from 5 stars to 1 star based on the site's reliability record for quick and efficient downloads.
9. The next step starts the download. The Oakland University FTP site was used here. Choose whatever site you wish. The browser address window displays the following information:

ftp://OAK.Oakland.edu/SimTel/win3/virus/wsc- 227e.zip

By looking at the formatting of this address (**Ftp://OAK...**) I could see that my browser was about to invoke its built-in FTP client to download the file from the specified location and directory path.

Notice that the retrieved file ends with the file name extension .zip in the DOS/Windows environment, or .sit or .hqx in the Mac environment. This means that the file was compressed in order to facilitate the downloading process and minimize the time involved. In order to use the file after you retrieve it, you must first *unzip* or *unstuff* it. If you have already been FTPing on your own, you probably have *PK-Unzip* (PC's), *UnStuffit* (Mac), or some other unzipper that does the job. If not, go back to the previous site, look in the zip directory, and download a file. If you use DOS, download the file *dos/zip/pkzm104.exe*, or for a freebie that works quite well, download *SimTel/msdos/zip/unz512c3.exe*. If you use Windows, check *SimTel/win3/archiver/uz60wn16.exe*. Mac users can locate *UnStuffit* at this same site. Just enter `UnStuffit` as the search string. The freeware file, *unstuffit-307.hqx*, is a self-extracting archive file containing *UnStuffit 3.0.7*. It will expand archives from *Stuffit* versions 1.5.1 to 3.0.7.

• • • • • • •

©Sybex Inc.

Most available FTP files fit into one of two categories. They are either freeware or shareware. McAffee's *Virus Scan* and *PKZIP/UNZIP* are both shareware. This means that you may download the software in order to evaluate it. If you decide to keep it, its author expects you to pay a registration fee. If a software is freeware, it is in the public domain and offered for public use at no charge. *UnStuffit* for the Mac is freeware. *Unzip* by Info Zip, the one I use, is also free. Whether the software is freeware or shareware, it is copyrighted, and the user has limited copying privileges. These terms are usually spelled out in a readme file that accompanies the software.

Of course one can download shareware and never pay the registration fee. This is a moral decision each individual must make. If you want to avoid making this decision, look for freeware, which is available in abundance. In fact, both McAfee's *Virus Scan* and *PKZIP/UNZIP* started out as freeware, graduated to shareware, and are now offered both as shareware and commercial software.

Teacher Exploration #2

Almost all downloaded files need to be unzipped, although a few files are self-extracting. Although a number of compression algorithms are in use, the .zip algorithm is most commonly used in the PC environment and the .hqx (bin-hex) or .sit (stuffit) algorithm in the Mac environment. It is assumed that you have downloaded and installed the self-extracting freebies *unz512x3.exe* or *unstuffit-307.hqx* from the site/path discussed above.

1. Unzip the McAfee file, *ucs-227e.zip*. (Mac users, see note below.)
   a. Place both *ucs-227e.zip* and *unzip.exe* in the same directory of your hard drive.
   b. Next, change to the directory where you have placed the files.
   c. Issue the command *unzip ucs-227e.zip*.
   d. After the process is complete, fifteen files that have been extracted from the .zip file will appear in your directory.

(R) SkyLight Training and Publishing, Inc.

2. Read the *readme.1st* file.
3. Examine the *packing.1st* file.
4. Install *uscan.exe* into Windows or run the program from file manager. This is the virus scan program from McAfee. It will scan your hard drive and memory. If there was a virus in the files you downloaded it will let you know and clean them from your system.
5. Experiment with your virus checker and learn how to use it.

Note to Mac users: Drag *Disinfectant* (3.6.sit) onto the Unstuffit icon. The Unstuffit utility will automatically activate itself and expand the *Disinfectant* archive. The unstuffed *Disinfectant* files will appear in the same folder as the stuffed archive.

Many Mac files are bin-hexed (another compression scheme) as well as stuffed. *Unstuffit* will not open a bin-hexed *Stuffit* (.sit.hqx) archive. You must first de-binhex it using a utility such as *Binhex 4.0* or *HQXer*. Both utilities are shareware and available on the Internet.

Another utility, *Stuffit Expander 4.0.1*, a freeware version of *Alladin's Stuffit/UnStuffit* product line, can be used to expand Stuffit, Compact Pro, BinHex, and MacBinary files, as well as other decompression algorithms.

You have now downloaded a few files and are aware of the virus problem and how to practice safe FTP. You also know the difference between freeware and shareware. So what exactly is available out there in FTP land that could be valuable to you and your students?

There are thousands of FTP sites. If you want a monster list of FTP sites, point your browser to **http://hoohoo.ncsa.uiuc.edu/ftp/** or to **http://www.info.net/Public/ftp-list.html**. However, this is not a good way to start. Chances are that the sites investigated in the following activities will suffice for most of your FTP needs. Some day you might want to look at the monster list and peruse it, but now is not the time. So let's get acquainted with some FTP sites.

IRI SkyLight Training and Publishing Inc.

Teacher Exploration #3

1. Two commercial sites that deserve attention are **http://www.shareware.com/** and **http://www.jumbo.com/**. Teacher Exploration #1 looked at the first one.
2. Point your browser to **http://www.jumbo.com/**. Unlike the Shareware.com site visited in the first activity, Jumbo uses a subject-index scheme instead of a searching paradigm to organize its site. Let's investigate some of the subject categories and see what might appeal to educators. You will immediately note the subject-oriented index.
3. Click on `Hobbies & Home`.
4. Next, click on the platform you are using. This example uses the Macintosh platform, but the procedure is similar for the DOS or Windows environment.
5. Then click on `Hypercard/science`.
6. Select `Misc/astronomy`. Who would have guessed that the files listed below had the inital starting point of `Hobbies & Home`? Remember the analogy at the beginning of the chapter of walking into a warehouse full of file cabinets? Jumbo's organization is on the weak side. You will need "to walk around the warehouse" a bit to find out what's there.

   The following is an abbreviated list of some of the software available:

Shareware Software Available

3dgalaxycollisions.cpt.hqx (File Size: 67504 Bytes; File Date: 9/14/91)

Enter in some preliminary data and this application will show you (not exactly 3-D, nor is it very fast) edge on and above how the galaxy collision would happen and what it would look like. Some example files are included.

©SkyLight Training and Publishing, Inc.

BEST COPY AVAILABLE

coordinates2.4.cpt.hqx (File Size: 110922 Bytes; File Date: 12/8/95)

Convert coordinates from geodetic to Cartesian coordinate systems, and vice versa. It will also compute distances along the ellipsoidal surface of the Earth and baseline distances, as well as chord distances.

earthplot3.01.sit.hqx (File Size: 166898 Bytes; File Date: 1/22/94)

You plug in the latitude, longitude, and altitude, and your Mac will draw a picture (by integer or floating-point map) for you that you can cut and paste (as a PICT or bitmap file). Includes Think C source code.

galacticinteraction1.0.sit.hqx (File Size: 127270 Bytes; File Date: 8/8/95)

Shows what happens when galaxies collide; uses edge-on and top views step-timed to show simulated action; requires 68020 or better Mac, System 7 or higher, prefers Thread Manager.

gravitation4.0.cpt.hqx (File Size: 44754 Bytes; File Date: 12/5/93)

A graphic, two-dimensional orbital simulation. Users can enter custom designed solar systems or run previously created ones. Systems can be viewed at varying zoom levels, recorded, and played back at high speed, and edited via the graphic solar system editor.

moonclock1.21.sit.hqx (File Size: 473537 Bytes; File Date: 12/20/94)

Produces a continually updating, real-time image of the moon for any place, time, date; gives lunar position in equatorial, heliocentric coordinates, etc.; shows the current Universal Time, observer's sidereal time, and the longitude, for which sidereal time is Ø hours.

moonphaser1.0.sit.hqx (File Size: 24825 Bytes; File Date: 12/26/91)

Calculate the phases of the moon easily with this simple, but colorful and thorough application.

orbitrack2.15.sit.hqx (File Size: 738899 Bytes; File Date: 3/14/95)

OrbiTrack is an artificial satellite-tracking program for the Macintosh. It will calculate look angles to selected satellites, plot current satellite positions on a world map, and display the visible passage of a satellite against background stars.

spacestation.cpt.hqx (File Size: 447710 Bytes; File Date: 5/8/94)

Elementary-level introduction to space and space exploration. Requires HyperCard 2.0.

telescopes1.02.sit.hqx (File Size: 84401 Bytes; File Date: 10/30/93)

An introduction to high school or college students of the instrumentation of astronomers. Graphics and pictures help to explain things such as the Hubble Space Telescope, Keck Telescopes, buying a telescope, and other concepts. Requires HyperCard 2.0.

BEST COPY AVAILABLE

©SkyLight Training and Publishing Inc.

7. Whatever platform you are using, explore some of the other areas. If you are using a DOS or Windows platform, be sure to check

```
>Education
>Educational programs
```

   It has a list of about two hundred Windows softwares and close to three hundred DOS softwares that can be used across the curriculum at all grade levels.

• • • • • • •

Had this book appeared a year earlier, the next activity would have sent you to an Archie search site. (Archie is to FTP what Veronica and Jughead are to Gopher—searching mechanisms.) However, the recent development of sites like Jumbo and SharewareCom, with their easy-to-use search engines, makes Archie a much less desirable searching tool. Nevertheless, you may still be able to find some FTP files using Archie that you will not be able to find at the other two sites. With time, Archie will probably no longer be used unless steps are taken to update its searching mechanism. ArchiePlex is one such updating attempt and can be found on the WWW. (If you would like to try an Archie search, see the ArchiePlex search activity in appendix E.)

And now for the most serious FTP challenge. Once you get to a site, the work has just begun. In order to become familiar with a typical FTP site, you must browse its directories and find out what's there. Several possible categories emerge—instructional software, FAQs, general utilities, lesson plans, archived discussion lists, resource lists, and important documents, among others.

There are many FTP sites that educators *may* find valuable. The word "may" is used because the value of an FTP site depends on what one is looking for. Certain sites are popular with educators because they contain archives of lesson plans, educational software, or are a source of well-known documents.

The following explorations investigate some of these sites. The first investigative stop is a popular software library at Washington University, St. Louis.

©McGraw-Hill Publishing Co.

Teacher Exploration #4

1. Use your browser to access **ftp://wuarchive.wustl.edu**. The contents of the root directory will appear.

```
.archive01/
.archive02/
README
README.NFS
SimTel
bin
decus
doc
edu
etc
graphics
info
languages
mirrors
multimedia
packages
pub
robots.txt
systems
usenet*
vendor
```

This is a fairly typical root directory. It is primarily a directory of subdirectories, with a few text files that can be read before navigating the subdirectories. Only one subdirectory is investigated here. Peruse others that look interesting to you on your own.

BEST COPY AVAILABLE

© Skylight Training and Publishing, Inc.

Please note: The directory listing above may not reflect the actual state of the directory when you access it because FTP site managers are constantly reorganizing their directories.

2. Click on `doc`, which leads to a subdirectory that contains the now-famous *Project Gutenberg* archives, an excellent collection of online texts of famous literary works.
3. Next, click on `Gutenberg/`.
4. Cursor down to `Indexall.gut` and click on it.
5. In order to focus on one file listed in *indexall.gut* and learn how to retrieve it, cursor down until you find
   `Jul 1996 notes from the Underground/Fyodor Dostoyevsky [#1] notunllx.xxx] 600`
   The beginning of the entry contains the date that this file was added to the Gutenberg Project Library. The library e-text archives are organized according to the year in which a particular text was added. This file can therefore be found in the *e-text96* (1996 electronic texts) directory.
6. Next, go back to the root directory by clicking on the link `Up to a higher level directory`; then click on `E-text96`.
7. Now scan the alphabetical list and find the file name *notunll*. It is available in a .txt version and a .zip version.
8. Click on the .txt version to display it on your screen. Clicking on the .zip version will prepare the file for download to your PC, assuming you want a copy for classroom or personal use. If so, click and the process will begin.

Please note: The above process could also have been accomplished with an FTP client with a few minor variations. However, most FTP clients will not display the .txt version of the file to your screen. Instead, the file would be downloaded

©SkyLight Training and Publishing, Inc.

when you clicked on it. FTPing via a Web browser has a distinct advantage—a text can be previewed.

Be aware that some of the documents in the Gutenberg Project Library are subject to copyright. You will see a (C) after the listing in the index when this is the case. Check the copyright laws regarding the educational use of such materials.

The following activity looks at *Project Hermes*, which makes the U.S. Supreme Court's opinions and rulings as far back as 1989 publicly available via the Internet. The fifteen-minute time lag between the time a new ruling is made and its appearance on the Internet makes this information very up-to-date. What a resource for current events!

Teacher Exploration #5

1. The information is posted at an official site: **ftp://ftp.cwru.edu/hermes**. In order to use this site, you have to know the case docket number or the case name. This is very cumbersome if you are not a constitutional lawyer.

   Instead, this site will only be used *indirectly* by linking to it from the law school at Cornell. Go to **http://www.law.cornell.edu/supct/**.

2. A number of options are available for accessing Supreme Court documents, including a key word search. Remember the 1996 case involving the Virginia Military Institute and the young woman who was denied admission? Let's do a key word search to find it. A key word might be *Virginia*.

3. Go to the link under 1996 and click on `Key Word Search`. Enter the search string `Virginia` and press `enter`.

IRI/SkyLight Training and Publishing, Inc.

4. The first entry listed, `United States v. Virginia et al`, bears a date of 1996. It could be the case we are looking for.
5. You can quickly find out by clicking on this link. A full summary of the case appears. It seems to be the one.
6. In order to download the syllabus, click on your browser's *File* menu and do a *Save As* to the directory of your choice. If you want to do it the hard way, get the file number, go back to the **ftp.cwru.edu** site, and locate the file for FTPing to your machine. Click on the file name to download it.
7. Notice that even though the file was retrieved through the Cornell Law School site, the syllabus was actually retrieved from the **ftp.cwru.edu** site.
8. Now use your browser *back* function to get back to the previous page and click on `United States v. Virginia` again. Next, expand the window that appears in the upper left corner of your browser. A number of options that can be used to investigate this Supreme Court decision are outlined below. The links are emboldened.

   Ascii **`Syllabus - Opinion Concur Dissent`**

   WordPerfect **`Syllabus - Opinion Concur Dissent`**

   Quite a set of options! You can get the syllabus, the opinion itself, or concurring and dissenting statements displayed to your screen, or download in Word Perfect format. Just point and click!
9. Click on some of the options. Aren't you glad that innovative minds are finding ways to make FTP a breeze? Using a Web browser makes everything so much easier.

• • • • • • •

The next activity explores a site with lesson plans. (Show me a teacher who isn't always looking for lesson plan ideas and I'll show you a retired teacher, or, a dead one.) An excellent FTP resource for lesson plans across the curriculum and at every level is the AskERIC Archives. The normal FTP path is extremely cumbersome and time consuming. However, AskERIC has recognized the problem and provided a way out.

IRI SkyLight Training and Publishing, Inc.

Teacher Exploration #6

1. Use your Web browser or Gopher client to go to **gopher ericir.syr.edu:70**. That's right, FTP via Gopher!
2. From the menu presented, cursor down to and click on `Lesson plans`.
3. Next, select `Subject specific lesson plans`.
4. Here's what you get:

```
Astronomy: Curriculum Unit for Intermediate Elem. Students
Language Arts
Mathematics
Miscellaneous
Science
Social Studies
Agricultural Lesson Plans
```

   AskERIC knows that the best way to access their lesson plan database is to circumnavigate the normal FTP process. If you select the normal AskERIC FTP path that was offered in the recent past to retrieve lesson plans (**ftp://ericir.syr.edu**), you will discover that their FTP server is in transition. Previously it was a confusing hodgepodge from which you had to laboriously glean information about a lesson plan you *might* want to retrieve and then go find it in the appropriate subdirectory. Lesson plans are no longer available on the AskERIC FTP server. It will probably go out of business as soon as AskERIC shifts its available files to Gopher and Web servers. That's life in a continuously changing technological world.
5. Continuing, select `Language Arts`. A list of about fifty lesson plan topics is presented.
6. The list contains a catchy sounding lesson plan called *Using Popcorn to create a reading book (K-3)*. It contains a lesson entitled *A Day Full of Popcorn*, which centers a whole school day around the use of the "tool" popcorn, with activities in language arts, math, social studies, P.E., music, art, science and *eating*!

BEST COPY AVAILABLE

© Skylight Training and Publishing, Inc.

7. To download the lesson plan, click your browser's *File* drop-down menu, do a *Save As* using the filename *popcorn.txt*, and save it to a diskette. Nothing to it! What you just did is a variation of FTP using a Gopher database with a Web browser.

Teacher Exploration #7

1. Go to **ftp://ftp.cic.net/pub/hunt/**.
2. Select `questions` and choose any of the listed files. Note that each file ends with a *.q* extension. Each archive file contains a list of ten questions designed to be answered by using Internet resources.

   A few sample questions from the Hunt archives include:

   a. I'm leaving for Japan tomorrow. Approximately how many yen can I get for my dollar, give or take a few yen?

   b. A hurricane just blew in! Where can I find satellite photos of its progress?

   c. Could you tell me how I can find the Washington address for the congressman from my district?

   A correct answer consists of reporting a specific answer if one is required plus the Internet source of the answer.
3. To get the answers, just return to the pub/hunt directory and select `results`. Make sure you retrieve the same file name, this time with the *.a* extension.

Please note: Some of the answers may need to be updated due to the dynamic nature of the Net, with resources appearing and disappearing almost daily.

NASA has long been an excellent provider of resources for educators, as pointed out earlier. Let's take a quick trip to the NASA archives and investigate *The Space Educators' Handbook*, originally a user-friendly

Copyright Corwin Press, Inc.

Macintosh Hypercard 2.1 space encyclopedia. This software program consists of thirty-seven individual Hypercard software computer files that include many popular space education resources of the NASA-wide teacher resource centers such as:

```
Aviation history
Space comic book stories about Lindbergh or the
   Apollo 13 rescue
Astronauts' biographies, including pictures
The NASA space interactive coloring book
How a rocket works
Space mathematics
Spacecraft in science fiction
```

Hypercard 2.0 or 2.1 is a must; it will not run with Hypercard 1.2. PC users, take heart, the PC equivalent of this resource is also available at the same location and includes a runtime version of ToolBook 1.5 by Asymetrix Corp., which is necessary to make the software work.

Teacher Exploration #8

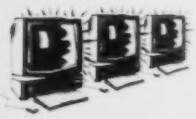
1. Go to

   http://tommy.jsc.nasa.gov/~woodfill/SPACEED/SEHHTML/seh.html.

   NASA, like AskERIC, has apparently abandoned FTP as a primary access tool for educators and others to download files in which they may be interested. Almost all file access has been channeled to NASA Gopher or NASA Web sites, from which the appropriate FTP sites can be accessed. For example, *The Space Educators' Handbook* is downloadable from *The Space Educators' Home Page* cited in the URL mentioned above. If you decide to download the program file, the FTP server is accessed via a link on the Web site. See what I mean by FTP in transition?

IRI Skylight Training and Publishing, Inc.

2. Approximately half way down the home page are links to download either the Mac or PC version of the handbook.
3. If you want more information about this excellent resource, click on the `About the Space Educators' Handbook` link and read the complete description.
4. Should you choose to download either version, be sure to click on `Instructions`. This is essential because when you download you will be transported to an FTP site and all you will see is the directory contents. You will need to know what to do with the listed files.
5. The handbook is downloadable in individual stacks or portions. Complete descriptions of each portion of the handbook are contained in the *README* file. You might want to read that first and then pick and choose the portions of the handbook that look particularly useful for your purposes before you invest the time necessary to download the entire handbook contained in the subdirectory.
6. To download either the entire handbook or portions of it, click on the appropriate link—`Windows Version ...` for PC users or `Hypercard 2.1 Version...` for Mac users.



Classroom Activity #1

1. One way to introduce older students (those who can read fairly well) to the FTP process is to lead them through a retrieval of an Internet document from a site such as **merit.edu**.
2. Go to **ftp://nic.merit.edu**.
3. Lead students through the search process by browsing the directories. The directory `introduci...` contains a number of documents about the Internet that you and your students may find useful.
4. Show the students how to download a document. Start by downloading the document `INDEX.int...`.
5. Once this resource, an index of introductory Internet documents, is in their hands, they can use it to find a variety of documents of interest to them.

©Skylight Training and Publishing, Inc.

6. One of the files in this directory, *internet.tools.summary*, is a document that lists, among other things, an inventory of other documents relating to FTP and the sites from which the information may be retrieved.

Please note: In order to read some of the full file names, you will have to place the cursor on the shortened file name and read its full name in the browser's display window.

7. Assign the various sites and informational documents to different students to retrieve and share with the rest of the class.

Classroom Activity #2

1. Adjust Teacher Exploration #1 and #2 to student needs by developing familiarity with the FTP process using whatever FTP utility is available. Have them practice downloading several files to acquaint themselves with the mechanics of the process.
2. Develop some specific guidelines for how you want to conduct FTP sessions in the classroom. Some issues to consider are:
   a. Download times and their effect on class time.
   b. Restrictions regarding LAN hard-drive space. Downloads can eat up hard-drive space very quickly.
   c. Ethical considerations regarding shareware. Regardless of your personal feelings about shareware, it would be smart to develop a classroom policy that emphasizes the commercial nature of shareware and appropriate versus inappropriate use.
   d. Download of software for personal use. Decide how you will handle this. Prohibit it? Allow it? Allow it only with certain restrictions?

e. Unacceptable FTP material. How are you going to define it?

f. Virus protection of your LAN as well as the individual work station.

Classroom Activity #3

1. Prepare a .zip or .sit file for students with a congratulations message on it and the answer(s) to a puzzle question(s) related to a current topic of classroom study.
2. Explain the rationale behind the compression and decompression process.
3. Pose the puzzle question(s) to the students.
4. Have students download the freebie software from Teacher Exploration #3.
5. Have them run the self-extracting file and use it to unzip or unstuff the file(s) you have prepared.
6. Students hand in their answer(s) to the puzzle question(s).

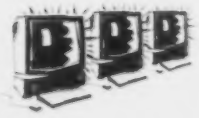
Classroom Activity #4

1. Have students FTP to **oak.oakland.edu** and browse the directories.
2. Have them create a diagrammatic scheme of the directory structure. Many students do not have the slightest clue about computer directories and subdirectories. Since this is an essential FTP concept, familiarity with it will increase file retrieval efficiency and skill.
3. With younger students, split the task up among a number of students and then construct a community directory composed of their individual findings.

Classroom Activity #5

1. Have students access an FTP site.
2. Explain the difference between ASCII and binary files to them.
3. Have students practice downloading each type of file.

Please note: Since the transfer mode is set by the browser, this activity is unnecessary if you are using a browser to access FTP sites.



Classroom Activity #6

1. Send students on a search for and evaluation of student instructional software.
2. This task will help you identify good instructional software for classroom use as well as familiarize students with the FTP search mechanisms. You will also get your students' input regarding the attractiveness or unattractiveness of the software.
3. Diversify the search by having some students use Archieplex, some shareware.com, etc.

Classroom Activity #7

1. Gather a set of questions from the Internet Hunt archives (see Teacher Exploration #8). Use a question each day or provide all ten questions at the beginning of the week. Most of the questions can have more than one answer.

© Copyright Technology and Publishing, Inc.

2. Conduct several hunts. This game-like atmosphere is a painless way to become familiar with the Internet. (Internet beginners may require some initial coaching.)
3. Post answers as they come in and establish prizes for the winners, such as free time on the Internet, or other special privileges.

Classroom Activity #8

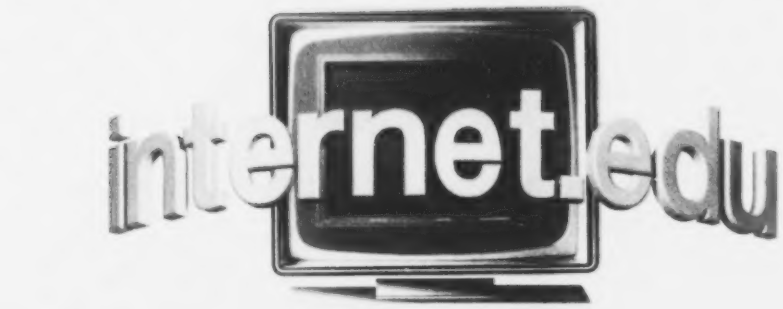
1. Restructure Teacher Exploration #4 and have students retrieve an electronic text of a famous work of literature from the *Gutenberg Project* Electronic Library related to your curriculum.
2. A number of works by certain authors are available that could be used to supplement your curriculum texts. For example, all of Shakespeare's sonnets are available.

Classroom Activity #9

1. For current events, visit Project Hermes and download a Supreme Court Decision Syllabus (see Teacher Exploration #5).
2. Have groups of students download and digest the concurring and dissenting arguments.
3. Create a role-playing situation in which the students argue the case based on their data.
4. Have the class vote on the decision (agree or disagree) and/or have them write concurring or dissenting views.

CHAPTER

8



IRC

Internet Relay Chat (IRC) is an Internet service that lets people get together for an online chat in real time (well almost—slight delays are inevitable). While in a *chat room*, as the major BBSs have dubbed them, or on a *channel*, the traditional IRC nomenclature, it is possible to "talk" to all the participants using a keyboard. All the IRC servers in the world are interconnected and your remarks, along with those of the other participants, are literally "broadcast" around the world on whatever channel you joined. By linking to one of these IRC servers with an IRC client (the software you use) you can follow the conversation and participate in any of fifteen thousand-plus chatting groups. Perhaps the best way to describe IRC is to call it the CB radio of the Internet, but here the "voices" are *read* instead of *heard*. Like a CB, IRC is frequently used for socializing, but it can be used for serious collaborative efforts as well.

Three major IRC networks are currently in operation. EFNet (Eris Free Net) is the original and the biggest. Although it is experiencing a lot of problems such as lag, hacking, disconnects, and various "wars" due to its size and older software, it is still the most popular IRC net.

Undernet was EFnet's first real challenger. It has grown rapidly and its user base is probably very similar to EFNet. DALnet was created by the EFNet chat group #startrek users so they could run their channel without hackers and netsplits (disconnects). DALnet is considered by many to be the third main IRC network. In order to link to any of these IRC nets you must supply your client with that network's server address. (Teacher Exploration #1 will show you how to obtain these addresses.)

Although IRC is a fascinating medium, it is fraught with problems for any classroom teacher. Remembering the meaning of the acronym is the least of your worries. In all of my journeys on the Internet, IRC has been the least satisfying and most negative. But before I jade your view of it, let me offer a disclaimer. Try IRC and judge for yourself whether my warning is just.

So, what exactly is the problem with IRC? Possibly because IRC happens in *real time* and is nearly impossible to monitor, it seems to bring out the worst in people more readily than any of the other Internet services. It seems to attract rudeness and disregard for the sensitivity and rights of others. Many of the channels carry inane and downright stupid conversational threads that are a waste of bandwidth and money if you are paying online time charges to a service provider. This is not to say, however, that positive and productive things don't happen on IRC. They do. However, if I

were told that I had to choose one Internet service to live without, it would be IRC.

Let me illustrate. While accessing the Traverse City Freenet one day I noticed a message posted by the system administartor that threatened to close the accounts of a number of participants in MicroMUSE, a chat game intended for educational use. The reason? A small group of individuals were disrupting the intended use of the service with inappropriate language and material. MicroMUSE is a monitored chat area that requires registration to participate. This allowed the owners of the site to effectively patrol its use and notify the system administrator at the Traverse City Freenet that people with freenet accounts were abusing the service. Unfortunately, this kind of control is usually not possible because *most IRC sites are unmonitored*, which makes them vulnerable to all sorts of abuse.

On the upside, this illustration also shows the value of IRC when it can be controlled, as is the case with the MicroMuse site. It has been in operation for a long time and is a valuable educational site. It is used in one of the classroom activities.

Therefore, a classroom teacher's main concern with IRC is the issue of control. *IRC should only be used in the classroom if some degree of control over the conversation stream can be assured.* This means control of both output from your students and input from individuals on the other end of the IRC channel. The teacher and classroom activities included in this chapter are all geared toward situations where this is possible. Students should never be able to freely navigate the general IRC sites on their own, which include such popular ones as the NFL chat area and others offered by CNN and some of the other major Internet players.

Across the country, parents, teachers, the government, and corporate America are expressing great concern about the availability of inappropriate material on the Internet and how to protect youngsters from its influence and expioitation. Unfortunately, Internet blockers and censorship schemes don't work with IRC. (More about these issues in chapter 10.) If you want to get rich fast, develop a software that will effectively block inappropriate material and language from IRC sessions. The main reason why effective IRC blockers have not been developed yet is that IRC is a constantly moving and changing target. It is the most dynamic of all the Internet services.

In addition, IRC is very popular with students. My experience with introducing high school students to the Internet is that IRC is the first service

©Waite Group Press

they want to explore. Denying access is counterproductive in terms of stimulating interest and excitement about the Internet in general, and eliminates the potential for cross-cultural communication. Each classroom teacher must weigh the advantages against the risks in his or herown situation and with his or her own students.

So . . . where does all this leave us? IRC s chief advantage is that it is happening *now* and as such lends itself well to give-and-take conversations. It also personalizes the Internet world and tends to break down social, cultural, racial, and economic barriers because individuals on IRC can t be identified in the traditional way.

In summary, use IRC carefully and sparingly until you are personally aware of all of the issues and the implications of its use. To that end, the explorations in this chapter are designed to acquaint you with the potential and the risks of IRC usage in the classroom.

Please note: To explore the modern equivalent of IRC, check out appendix D CU-SeeMe: An Emerging Internet Technology. CU-SeeMe is a video-conferencing program, not really IRC. It uses a chat box along with a video image of the person with whom you are speaking. If you have sound capabilities, you can communicate in real time by voice as well as video. Many schools are experimenting with this medium.

Theoretically, there are three ways to access IRC. An IRC client or a Web browser can be used to access IRC if you have a PPP or a SLIP connection. If you are limited to telnet, you can still access a public IRC client, but here s where the theoretically enters the picture. Unfortunately, any list of IRC telnet clients is obsolete before it is created. Demand for these servers is so high that they can t keep up with the traffic and consequently shut down. A year ago a list could have been provided; at this time it is futile to do so. Therefore, it is assumed that you will download an IRC client if you don t already have one. This is the preferred way to go.

The following activity shows you where to get your own IRC client and find a list of available IRC servers.

Teacher Exploration #1

1. Mac Users, point your Web browser to **http://www.ircle.com/**, where a popular Mac IRC client is located. It is shareware ($15). This site provides information about the software and offers a quick link to downloading it. Be sure to access the PC site in #2 below; it offers an excellent FAQ section on IRC.
2. PC Users, point your browser to **http://www.mirc.co.uk/index.html**, where you will find mIRC, a Windows-based shareware ($15) IRC client. (Educational institutions get a free ride!) Like the Mac site listed above, this site provides full information and a download link. Be sure to read *Frequently Asked Questions about IRC*, an excellent tutorial on IRC with links to other useful IRC documents.
3. If you are a PC user and want a comparison of available IRC clients, go to **http://www.scescape.com/software/win/irc.html**. Mac users, go to **http://www.scescape.com/software/mac/IRC/index.html** for a comparison of IRCLE and Homer.
4. Now for a look at some IRC server sites, which are the sites you type into your client during the setup process. Thereafter, your client will automatically access whatever server you chose. Go to **http://www.newbies-netguide.com/irc/servers.html**,where you will find a list of available servers and their addresses classified by geographical location. The rule of thumb is to use the one closest to you geographically. These are the addresses you will enter into your IRC client.

Teacher Exploration #2 introduces you to IRC via the Web. As will become apparent, the preferred way to access IRC at present is with an IRC client, whether it exists on your machine or that of your service provider.

Teacher Exploration #2

1. For direct Web access to IRC, go to **http://www.alamak.com/chat/index.html**, which is *Alamak's WWW & Internet Relay Chat Gateway*.
2. Cursor down to the end of the *Alamak* page, which lists two chat servers. One is "local," and has about thirty groups to choose from. The other is "global," and links you with people from around the world. Select server #2 and click on `Global`.
3. Next enter a nickname for yourself and skip the comment box.
4. Click on `Enter Alamak Internet Chat.`
5. Read the guidelines and click on `I agree to the policies/continue.`
6. Type a message in the box at the bottom of the screen and click on `Post`. Your message will appear on the last line of the dialogue on the screen. Each time you click `Post`, you will get an update on what has been said.

As you can see, this is one application that the Web has not dominated. This is because all Web access IRC sites require a refresh of the site location in order to read the latest chat updates. Not exactly real time, especially if you have to wait a minute or two because of heavy Web traffic. Web sites don't even come close to the running script you get when accessing IRC with a client. However, it is the best IRC the Web has to offer at present.

The amount of background information about IRC has been kept to a minimum so far. The next activity provides a brief detour to a site that offers all you need to know about IRC but were afraid to ask. Make the trip if you want to find out more. This could be the place to go when you introduce IRC to your students.

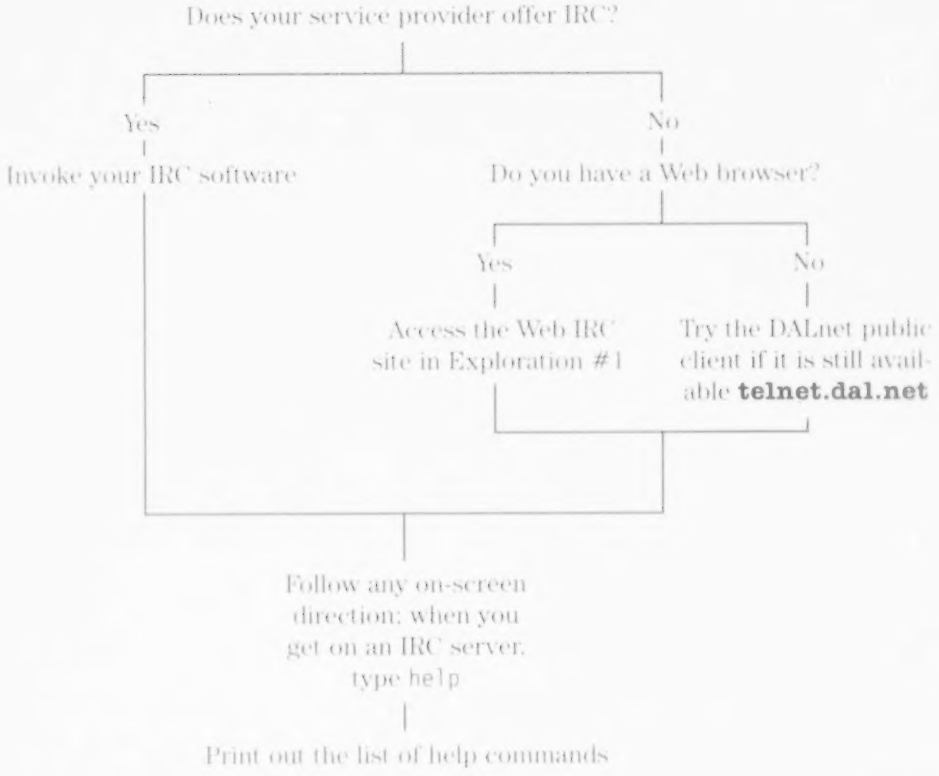
Teacher Exploration #3

1. Go to **http://www.geocities.com/TheTropics/1945/index12.htm**.
2. Poke around. There is plenty of IRC information at this site with links to additional information elsewhere.

Getting through an IRC session can be a real chore until you learn some of the common navigational commands. The following exploration will help.

Teacher Exploration #4

1. Follow the flow chart below to find out what the common IRC commands are (IRC is a navigational skill in and of itself).


Does your service provider offer IRC?
Yes
Invoke your IRC software
No
Do you have a Web browser?
Yes
Access the Web IRC site in Exploration #1
No
Try the DALnet public client if it is still available telnet.dal.net
Follow any on-screen direction; when you get on an IRC server, type help
Print out the list of help commands

© Copyright Corwin and Publishing Inc.

2. These are the crucial commands used to navigate the IRC server. Keep them handy until you get good at running an IRC session. A much smaller essential list of commands is printed below. Note that every command begins with a foreslash (/).

   /help Displays a list of all the IRC commands.

   /help intro Gives an introduction to IRC.

   /help newuser Help information directed at the novice.

   /help command Gives further help with a specific command. For example, /help *join* gives help on how to join a channel.

   /list Don't use this one. There are several thousand channels, and it will take ten minutes to scroll through them.

   /list -min nn This will provide a list of all channels that have at least *nn* active users, where *nn* is any number—a much more practical list command.

   /list -max nn Use this command to list all channels that have a maximum of *nn* users.

   /nick yournickname Assigns the nickname of your choosing, as long as no one else is using it.

   /join #channelname Join a channel such as politics or K–12.

   /leave #channelname This one is obvious.

   /whois nickname or **userid** Gives real-life info about an IRC user.

   /bye or **quit** Ends the IRC session.

   As indicated in the flow chart above, DALnet, an alternative to the EFNet and Undernet IRC nets, was available via telnet as of this writing. You may still be able to get on the DALnet telnet server. Give it a try.

3. Telnet to **telnet.dal.net** and login `dalnet`.

4. If you have your own client, a list of Dalnet servers can be obtained from **http://www.dal.net/**.

. . . . . .

And now, let's actually initiate a chat session.

©1996 Ziff-Davis Publishing Co.

Teacher Exploration #5

1. Get to an IRC site (see Explorations #1 and #4), or go to **http://www.dal.net** and select `telnet to DALnet`.
2. To find a popular channel, type: `/list-min 10`. This provides a list of channels that currently have at least ten chatters.
3. Select a nickname, and make it unique. The server may ask you to select another nickname if yours is already being used by someone else. Type `/nick <selectaname>`.
4. Now select a chat group and join in by typing `/join #<whatever>`. Since IRC is the most dynamic of any of the Internet services, it is difficult to predict what will be on your list.
5. A good way to start the conversation is with "Hi everyone." You will get responses from a number of the users. Several threads of conversation will be running simultaneously. Get in on one and chat, or just *lurk* (listen without chatting) for a while to get the drift of the chat, and then jump in.
6. Try out some of the commands.
7. When you've had enough, announce your departure with `/leave #<whatever>`.
8. Join several channels to get a feel for the kinds of topics and people to be found on IRC.

Teacher Exploration #6 provides practice with operator commands.

© Copyright Pearson Education, Inc.

Teacher Exploration #6

1. This activity is more helpful if you have a buddy on IRC with you.
2. Establish a channel by joining a unique channel that does *not* already exist. For example, `/join <putareallyweirdnamehere>` will probably create a new channel unless somebody else has already thought of your really weird name.
3. Now that you have created the channel, *you are the channel operator*. You can make it private and open only by invitation.
4. Invite your buddy to join you on your channel by typing `/msg <nicknameofbuddy>` followed by text. For example, `/msg goober "Hey goober, join me on #<reallyweirdname>."` This message goes only to goober, your buddy; nobody else can read it.
5. After goober joins you on *#reallyweirdname*, make the channel private by typing `/mode * +pi` (p = private; i = invitation only).

   Now no one else can read or send messages because they simply can't get on the channel unless you invite them. As far as I know, this is the only way to create a secure channel and control the dialogue that takes place.
6. Since you are the operator, you can also kick your buddy off the channel. Type `/kick goober` and he is gone! Now invite him back.

   These operator commands can be used to create a secure chat environment for your students.

• • • • • • •

Kidlink IRC, a controlled form of IRC and an alternative to the riskier, full-blown IRC, is explored in the following activity.

IRI/Skylight Training and Publishing, Inc.

Teacher Exploration #7

1. Go to the Kidlink site at **http://www.kidlink.org/IRC/**.
2. Explore the site by clicking on a number of the links. Be sure to check the following:

   `KIDLINK IRC lessons and activities`

   This link provides several excellent examples of past sessions on Kidlink IRC.

   `Register for KIDLINK IRC via WWW`

   Full directions for different classifications of registration are given.

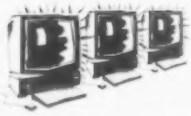
   `Registered KIDLINK IRC users`

   This list is worth looking at just to appreciate the widespread use of Kidlink IRC.

Another safer alternative to the riskier, unstructured IRC is MicroMUSE, a multi-user simulated environment game that uses the IRC medium. Cyberion City II is a twenty-fourth-century city located in orbit around the earth. In reality it is located on MIT's Artificial Intelligence Computer. Cyberion City has virtual dimensions, objects, processes, and, of course virtual characters. Teacher Exploration #8 will show you how you too can become a virtual character in Cyberion City. Teacher Exploration #3 in the next chapter contains complete instructions for this activity.

Classroom Activity #1

1. Adapt Teacher Explopration #4 for your classroom.
2. Have students access an IRC site and get a list of commands by typing /help. (Or print out a list and duplicate the most basic commands from Exploration #4 for each student.)
3. Explain the use of these navigational commands. Point out that in order to establish and use an IRC channel, these commands are used and that they are common to all IRC servers.



Classroom Activity #2

1. Get on an IRC server, establish a channel, and become the operator. (See Teacher Explorations #4 and #5 for directions.)
2. Get your students on IRC and have them join the channel.
3. Start the chat session, being sure to focus it on a question or a topic you want the class to discuss. This activity prepares the students for Classroom Activity 3.

Classroom Activity #3

1. Now for the brave at heart . . . a suggestion for the responsible use of IRC.
2. Using e-mail, establish contact with a teacher at another school and invite him or her to join you on IRC at a specific time. Remember that different regions of the world are in different time zones. (See chapter 4 for suggestions on how to do this.)

3. Collaborate with the other teacher on a topic for discussion.
4. Get on an IRC server, establish a channel, and become the operator. (See Teacher Explorations #4 and #5 for directions.)
5. Get your students on IRC, have them join the channel, and start the chat session. Use the prearranged topic you agreed on with the other teacher. Remember, the operator has control over the channel.
6. If you have the proper equipment, project the chat on a screen, which can be useful if you have a limited number of computers to work with and the whole class is unable to chat simultaneously.

Classroom Activity #4

1. If the previous activity was a bit too much, here's an alternative. Kidlink IRC is a modified form of IRC that exists just for educators and students.
2. Go to **http://www.kidlink.org/IRC/**, where you will find a description of Kidlink IRC and how a student may register.
3. This site is accessible via IRC client or telnet.
4. What is its advantage over a regular IRC session? Kidlink IRC is *not* part of EFNet, Undernet, or DALnet, which are the three worldwide IRC networks. All of them have a number of undesirable channels unfit for your students. With Kidlink IRC, you don't have to worry about inadvertently exposing them to these kinds of channels.

   Kidlink IRC requires registration in order to participate. This gives a modicum of safety since the Kidlink monitors can easily "unregister" any youngster who is abusive or disregards the rules. That means you can be less cautious and will not need to scrutinize the communications, since every student will know that his or her remarks are being monitored and can be traced back to him or her.

   Since the purpose of Kidlink is to promote worldwide dialog, you can be fairly certain of reaching any cross-cultural goals you may have for your class.

IRI SkyLight Training and Publishing Inc.

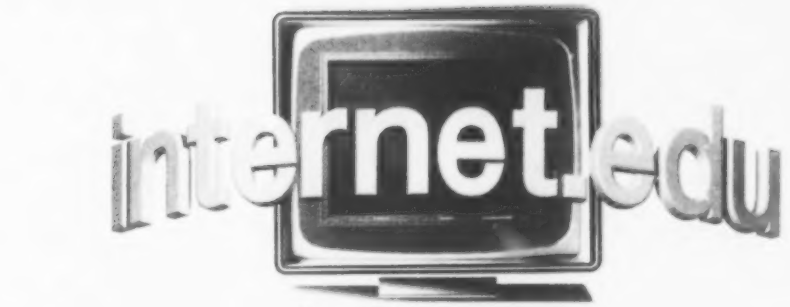
Classroom Activity #5

1. Refer to Teacher Exploration #8 for a description of MicroMUSE, another somewhat controlled alternative to unstructured IRC.
2. Many creative opportunities exist to get your students involved in this special use of IRC, which includes cross-cultural communication opportunities in an unusual simulation game setting. Students are able to create rooms, objects, and situations and interact creatively with other students' creations.
3. Completely text-based, this is also a good site to practice reading and writing skills.

©SkyLight Training and Publishing Inc.

CHAPTER

9



TELNET–THE STONE AGE INTERNET STANDARD

Please note: It was very difficult to decide whether or not to include this chapter on telnet. Since this chapter was orginally conceived and written, numerous educational telnet sites have terminated their services. Giants in the Internet educational world like AskERIC have discontinued their telnet services in favor of Gopher and WWW servers. It is my guess that it won't be very long before a host of other telnet servers discontinue their services in favor of new technologies as well. Be advised that the sites mentioned in this chapter are in their twilight days, and it is highly likely that you will find a number of them no longer accessible.

The standard definition of telnet found in most Internet books usually refers to the user's ability to take command of a remote computer as if it were his or her own. In reality, this definition is not exclusive to telnet but also applies to WWW, Gopher, and FTP. All of these forms of Internet service allow you to control a remote computer to one degree or another. The original telnet definition evolved, however, because telnet was a process that relied on a command-line interface and the user gave the remote computer direct commands.

Typically, you logged in to your own server and were greeted by a Unix prompt, which waited for a Unix command. If you told it to telnet to a remote computer, you were greeted by another cryptic prompt after you logged in to that site. The whole transaction depended on your knowledge of Unix commands and your familiarity with the remote computer and the data it had to offer. Some of this kind of telnetting still takes place, but telnet has also evolved in keeping with the user-friendly trend taking place on the Internet. Most telnet locations are now menu-driven; you don't have to know how to manipulate the remote computer through command-line instructions.

Freenets, for example, are typically accessed via telnet, and the Unix computer at the remote freenet site is given commands *indirectly* through the menu choices the user makes. In essence, the freenet software provides

the server the Unix commands based on your menu selections. That sure beats the old way of doing it.

For all of these reasons, it is probably better to define telnet more simply as a *type of protocol* used to access a remote computer. It is different from WWW, Gopher, and FTP only in its language of access. For example, you can telnet to the Michigan State Gopher or use a gopher client to access it. One server is designed to handle the telnet protocol and the other is designed to handle the Gopher protocol. The presentations of the remote computers, however, are identical—a menu of choices.

So, the bottom line is that there is nothing functionally exceptional about telnet that distinguishes it from the other Internet services. Even the kinds of sites that were once uniquely accessible via telnet are today accessible via Gopher and the World Wide Web. Telnet is simply one of several ways to access and use a remote computer. Many telnet sites offer databases for educational use.

One other consideration is worth mentioning, particularly if you are part of the rapidly diminishing segment of Internet users whose primary means of Internet access is telnet. In the "olden days," just a couple of years ago, telnet access was sufficient because sites existed that could expand your repertoire of Internet tools by offering public IRC, Gopher, or Web clients. These telnet sites were widely available a few short years ago because everybody had telnet, but very few people had Gopher software or WWW browsers. Today these telnet helper sites are all but gone. The few I know of exist primarily on freenets, which typically offer these antiquated services to members only.

Hence, the activities in this chapter focus on a number of sites important to educators and ignore the process of telnet itself. Chances are you will access telnet via your Web browser anyway, (**telnet://location**) and it will be very unusual if you bump into a command-line telnet site where you will have to take direct control.

Let's investigate some telnet resources that may be helpful in your classroom. We will start by gophering. Good thing you've got that Internet tree model to keep all this straight in your head!

(c) Copyright Training and Reference, Inc.

Teacher Exploration #1

1. Gopher to **gopher.cic.net**. If you worked through the activities of chapter 4, this site will look familiar.
2. Follow the menu path

   >Other CICNet projects & Gopher servers
   >K-12 Gopher
   >Telnet sites

3. The following list of telnet sites is an abbreviated version of the full list. Many sites on the original list are no longer active, and others have switched to gopher or WWW protocol. Other sites that were dropped were not good education resource sites anyway. The telnet addresses are presented in browser form. To use the telnet equivalent, just drop the **telnet://** designation and the port number **:23/** off of the addresses listed on the next page.

   Please note: Some of the telnet addresses on the next page will be different than the ones you find on the CICNet Gopher. This is because they have changed and CICNet has not updated the old addresses. Sites that are starred should not be missed.

4. Select whatever site looks interesting.
5. For example, select NASA SpaceLINK. The next screen presents two options:
   a. About this site
   b. Go to Spacelink
6. Select About this site. This general format is what you will find with each site selection you choose—a complete site description including:
   a. access details

[illegible] Learning and Publishing, Inc.

Educational Telnet Sites

Academy One	**telnet://freenet-in-b.cwru.edu**
Cleveland Free-Net	**telnet://freenet-in-b.cwru.edu:23/**
*Eisenhower National Clearinghouse for Math and Science Education	**telnet://enc.org:23/1**
Geographic Name Server	**telnet://martini.eecs.umich.edu:3000/**
*Martin Luther King, Jr. Bibliography	**telnet://forsythetn.stanford.edu:23/**
*MicroMUSE	**telnet://guest.musenet.org or telnet://michael.ai.mit.edu:23/**
*NASA SpaceLINK	**telnet://spacelink.msfc.nasa.gov:23/**
*Newton	**telnet://newton.dep.anl.gov:23/**
Weather Underground	**telnet://rainmaker.wunderground.com or telnet://um-weather.sprl.umich.edu 3000**

b. login instructions

c. a very descriptive account of site offerings

d. the date of the last revision

7. Use *back* to go to the previous gopher page. The same menu appears.

```
a. About this site
b. Go to Spacelink
```

8. This time, select `Go to Spacelink` and explore the NASA site.
9. The rest of the explorations visit a few of these other educational sites from the list above. Visit some of the others on your own. You never know what you might find.

• • • • • • •

Much material useful to educators resides on freenets scattered around the world and anyone can login as a guest. However, guests are often

BEST COPY AVAILABLE

denied access to various areas. Typically a message like *Guest Access Denied* is sent. However, there is a way to circumvent this problem—register and become a member. It's free—that's why they are called freenets—but the process can be time consuming and even tedious.

Student use of freenets should be limited to guest logins. Registering a whole class of students is too time consuming considering the wealth of Internet resources that can be found elsewhere. Nevertheless, investigate freenets as a teacher tool.

Teacher Exploration #2 provides *instant access* to a number of freenets around the world.

Teacher Exploration #2

1. Direct your Web browser to go to one of the following two sites:
   http://www.uucom.com/~glato/Freenets or
   http://www.usask.ca/~scottp/free.html.
   Both offer extensive lists of available freenets as well as login information. The first site is a little easier to use because it is organized geographically. Take a look and see what you come up with.
2. In the meantime, let's take a quick trip to the Cleveland Freenet, one of the first freenets in operation and still going strong. Its software was developed at Case Western Reserve University. Almost all freenets use this software.
3. Telnet to **freenet-in-b.cwru.edu**.
4. Login as a visitor and browse the main menu by entering the number of your selection. *Academy One* is an especially fruitful area.

IRI SkyLight Training and Publishing, Inc.

Please note: Since freenets are, for the most part, local community resource tools, much of what you will find is important to residents of that particular community but not necessarily to you. However, since nearly every community considers education to be important, a portion of the menu will be devoted to resources for parents, teachers, and students.

The next stop deals with MUDs, MUSHes, MUSEs, and MOOs. Internet acronyms are amazing! They can all be put under the umbrella of MUSEs—Multi-User Simulated Environments—because they all work pretty much the same way. MUSEs, MUDs, and MOOs are currently all forms of IRC. Designed as virtual reality games that require the interaction of the participants, these sites are all text-based but, no doubt, will eventually take on the graphical presentation of the Web. For now, however, they are excellent tools for developing the imaginative and creative skills of students, not to mention getting them involved in reading, writing, and interpreting.

MicroMUSE, one of the telnet menu choices in the previous exploration, will be used as a model for the more than two hundred different simulation adventures that currently exist on the Net. It was chosen because, as a K–12 site, it is dedicated to teaching and learning. In addition, it is monitored and has very strict usage guidelines. This is not to say that abuse cannot happen, but currently it is one of the "safest" MUSEs on the Net.

Please note: Be careful with any MUD or MUSE you are considering using with your students. There are some pretty wild sites out there. Investigate MUDs and MUSEs thoroughly for an extended period of time before making a decision about classroom use.

©1996 Skylight Training and Publishing Inc.

Cyberion City II is a twenty-fourth-century city located in orbit around the earth. In reality it is located on MIT's Artificial Intelligence Computer. Cyberion City has virtual dimensions, objects, processes, and, of course virtual characters. The following activity demonstrates how you too can become a virtual character in Cyberion City. (*Note:* this exploration was referred to in chapter 8, since it uses the IRC meduium.)

Teacher Exploration #3

1. We will access MicroMUSE by telnet to MuseNet, the Multi-User Science Education Network. Telnet to **guest.musenet.org** on **michael.ai.mite.ed**.

   If these addresses are busy, the following were also available for telnet as of publication:

   atto.ee.usm.maine.edu
   pico.ee.usm.maine.edu
   micro.ee.usm.maine.edu
   cyberion.ee.usm.maine.edu
   femto.ee.usm.maine.edu
   nano.ee.usm.maine.edu
   bridges.ee.usm.maine.edu
   muse.ee.usm.maine.edu

   In addition, MicroMUSE is available via gopher or the Web at **http://www.musenet.org/** or **gopher://gopher.musenet.org**.
2. Login as `guest` (lower case only).
3. A long set of instructions will scroll by your screen. Use your telnet client's scrollback feature to go back and read the entire set of directions.
4. While you are doing this, MuseNet will automatically bring up the virtual reality world, MicroMUSE.

5. You are now asked to type in a name by which you will be identified in Cyberion City. If someone else is using that name, MicroMUSE will not allow you to continue until you provide a unique name. Try a few like Ibyx or Cyzork, names that are probably not already in use.

   Before we continue, let's return to the long list of directions. What did you find there? Among other things, you should have found a list of other virtual reality worlds you can enter once you have been admitted to MicroMUSE. These virtual reality worlds go by the following names: Bridges, EON, 1848, MariCopa, Chicago, CyberLib, EcoMuse, OceanaMuse.

   Each is a unique world dedicated to educational use. Once you have entered MicroMUSE, you can get to another world by using the command, `/world <worldname>`. For example, to go to the virtual world *Chicago*, the command would be `/world Chicago`. It is possible to open several worlds simultaneously and toggle between worlds using the command `Esc-B`. To leave a particular world, use the command `/dc`. In order to keep things simple, we will only enter the MicroMUSE world. Explore the other worlds yourself after you know your way around Cyberion City. Techniques for navigating the muses are fairly consistent from world to world.

6. When you are finally admitted to Cyberion City you will be put on the *learning track* and introduced to a number of basic commands that will help you find your way around, view a room, pick up objects, and speak to other characters. Jot them down as you travel along the learning track. Life in Cyberion City can be confusing unless you have the basic commands under your belt.

7. At some point along the way you will be introduced to the *who* command. It provides you with a list of mentors who are ready to assist you. Don't be afraid to *page*, or talk to, them. They are very friendly and love to help newbies.

8. For example, if you ask a mentor how to register, he or she will handhold you through the procedure. (My mentor asked for my full name and e-mail address. Within forty-eight hours I got my unique password, and am now a registered character on MicroMUSE.)

9. If you register as a character, you will get a password along with a set of instructions and guidelines. You are now ready to seriously investigate Cyberion City II.
10. Be sure to investigate MicroMUSE thoroughly. Talk to some of the mentors and ask them for names of other teachers who are using MicroMUSE. Watch for them online and talk to them about student use of MicroMUSE, or learn to use the MicroMUSE mail facility, an internal mail system for characters participating in the game, and contact them via *+mail*.

Please note: If you are intrigued by the concept of MUDs and MUSEs, an excellent article on their educational use can be retrieved from **http://www.musenet.org/micromuse/Muse.in/Education**. A more general and scholarly approach to virtual reality is Virtual Communities: The 90's Mind Altering Drug or Facilitator of Human Interaction?, which can be found at **http://www.sils.umich.edu/impact/students/jaye/jaye_asis.html**.

The next activity explores the Eisenhower National Clearinghouse (ENC), a nationally recognized information source for K–12 math and science teachers. It is accessible via telnet or the World Wide Web, and has a large variety of valuable resources.

Teacher Exploration #4

1. Telnet to **enc.org** (Web site **http://www.enc.org**).
2. Login guest followed by <enter>. You will be asked to press your backspace key and enter your terminal emulation type.
3. The next prompt asks you to enter your user ID. If you are not a registered user, enter new. If you don t want to register, you won t gain access to this telnet site. (Go ahead and register you won t regret the investment of time when you see the stockpile of math/science resources.)
4. Select

   ```
   >Explore over 300 education related World Wide Web and
    Gopher sites on the Internet.
   ```

5. Interestingly enough, you are now offered either gopher or WWW access to the Clearinghouse resources via Lynx, a text-based browser. You don t need your own client to continue. (The information is identical, but the mode of presentation is different and the categories are arranged differently.)
6. The Lynx browser is the most direct route to the following menu choices. Therefore, select

   ```
   Web page - ENC Online's Web page menu.
   ```

7. Select the following sequence of choices:

   ```
   >Welcome to ENC
   >http://www.enc.orf/classroom/nf-index.html
   >Classroom links
   ```


(R) SkyLight Training and Publishing, Inc.

The starred items are a good place to start.

```
The On-line Chalkboard
Resource Finder
*The Digital Dozen
Online Documents
ENC Publications
ENC Services
*Lessons and Activities
        *Math
        *Science
        *Math & Science
        *General K-12
```

The following is a list of sample items found under the starred categories:

Hands-on-the Florida Aquarium

See some aquarium residents up close and explore excellent experiments for "wannabe" marine biologists of all ages.

Good News Bears Stock Market Project

This *interdisciplinary* project is designed for middle school students and teachers. It involves an interactive stock market competition between students using real-time data from the New York Stock Exchange and NASDAQ.

Elementary Science this Month

This site features a new group of science activities, a "scientist of the month," a map of the month's night sky, and other items of interest on a monthly basis.

Puzzle Corner

This AIMS Education Foundation site contains new and old problem-solving challenges and supplies illustrated worksheets.

Big Sky Lesson Plans

Big Sky provides teachers with tons of lesson plans in areas such as language arts, mathematics, science, and social science.

BEST COPY AVAILABLE

Googolplex

A truly fascinating site dealing with really big numbers and their history, conception, and perception.

WebElements (Periodic Table)

An online periodic table of the elements. Click on the element of your choice to learn about its atomic characteristics.

• • • • • • • • •

The acknowledged patriarch of the Civil Rights Movement in the United States is Dr. Martin Luther King Jr. Our society continues to grapple with the issues he raised. Any teacher who deals with these issues in his or her classroom will be happy to know that an archive exists which houses bibliographic references to Dr. King's speeches and writings, as well as writings of others about Dr. King. The archive is an excellent resource for teacher and student alike. Teacher Exploration #5 demonstrates how to tap this resource. Although somewhat cumbersome to use, it is well worth the effort.

Teacher Exploration #5

• •

1. Telnet to **forsythetn.stanford.edu**.
2. At the ACCOUNT? prompt, type Socrates.
3. At the OK TO PROCEED? prompt, type YES.
4. At the TYPE OF TERMINAL? prompt, type VT100. If this is not your terminal type, type HELP for a list of terminal types that the computer at Stanford recognizes.
5. At the YOUR RESPONSE prompt, type select mlk.
6. You are now in the MLK Bibliography.
7. A number of options appear. At the YOUR RESPONSE prompt, type Browse.
8. Next, at the TYPE OF BROWSE prompt, type A.
9. At the ENTER AUTHOR prompt, enter King, Martin Luther.

© SkyLight Training and Publishing, Inc.

10. You are now given a number of bibliographic choices. At the `YOUR RESPONSE` prompt, type 7. (King, Martin Luther Sr. [2 citations])
11. Typing `Options` at the `YOUR RESPONSE` prompt reveals a number of things you can do with the bibliographic entries.
12. After perusing the options, I decided to e-mail them to my address. To do this I used the command `mail 7 to raese@ix.netcom.com`. To do the same, just replace my e-mail address with yours.
14. Within a few minutes I received both of the bibliographic references. The one I was interested in was "The Day They Killed My Son," *McCalls*, April 1978. It's off to the library now, or maybe I'll do a search to see if its in the cyberspace library somewhere.
15. Spend time exploring some of the other options. To end your session, type `end` at the `YOUR RESPONSE` prompt.

. . . . . .

The Division of Educational Programs at the Argonne National Laboratory runs a BBS called Newton that is still available via telnet. However, the BBS is in a state of transition and will cease to exist in its present form, perhaps even by the time you read this.

Teacher Exploration #6

. . . . . .

1. You can keep up with the state of the Newton BBS via the Web. Just go to **http://www.dep.anl.gov/** and click on `Newton`.
2. In the meantime, you may still be able to access Newton by telnetting to **newton.dep.anl.gov**. You will need to register as a user of the BBS in order to use it, but its features make it worth your time. Go through the registration process by following the on-screen directions.

3. After you register, go to the fourth selection, Network. You will find telnet links to other sites:

```
Weather Information
Earthquake Information
Geographical Information
Periodic Table Information
```

   Pick one and explore. The earthquake selection has a lot of data a science class can use for interpretation and analysis.

4. Another area that requires permission is the chat area. Currently it consists of

```
Chat Class - Class (for students)
Chat Teacher - Teacher (a forum for teachers)
Chat Teacher - Scientist (a teacher forum for chatting with
scientists)
```

   Directions on how to obtain permission to use one of these chat areas is provided when you attempt to access one of them.

Classroom Activity #1

1. When you are ready, introduce your students to MicroMUSE.
2. Explain the concept thoroughly so your students can conceptualize the context in which they will be operating.
3. Get some of your classroom artists to begin constructing Cyberion City II.
4. Prepare a log for your students to use each time they enter Cyberion City. The log should include room for descriptions of the parts of the city that they visit, characters they meet, topics of conversation, and descriptions of creations they construct.

Wadsworth Publishing Co.

Classroom Activity #2

1. Cyberion City II has an internal mail system. Each student character has a mailbox and can communicate with other student characters.
2. Encourage your students to explore the mail system and learn how to use it. Don't overlook the use of mentors to assist in the learning process.

Classroom Activity #3

1. Explore the possibility of establishing a classroom chat at Newton, the Argonne National Lab BBS (see Teacher Exploration #6).
2. Have your class gain permission to enter the `Class Chat - Class` area and talk with students from around the world.
3. Structure their chat time to gather information about another person. A list of five interview questions could be developed as a class. For example, a starting question could be "What do you like to know about others as you start to become friends with them?"

Classroom Activity #4

1. Have students visit the Martin Luther King Jr. bibliography archive (see Teacher Exploration #5).
2. Collect magazine references from the archive.
3. Have students locate the magazine articles at the school or local library and photocopy the articles from magazines or microfilm.
4. Prepare a series of informative reports on the life and ideas of Dr. King.

Classroom Activity #5

1. Have each of your students register at a different freenet somewhere in the world (see Teacher Exploration #5 for directions on obtaining a list of available freenet sites).
2. This is an especially useful activity if they do not have their own e-mailboxes. By registering, students automatically get an e-mail address on the freenet, which opens the world of e-mail to them. All of the classroom activities in chapter 5 can then be coordinated with this chapter.
3. Students can also be encouraged to formally or informally share information about their freenet sites in the classroom.

Classroom Activity #6

1. Investigate the *Good News Bears Stock Market Project* on the Eisenhower National Clearinghouse site (see Teacher Exploration #4).
2. Follow the path

```
>Welcome to ENC
>http://ww.en.org/classroom/nf-index.html
>Lessons & Activities
>Math
>Page down
```

3. Initiate the project in your class or establish a team-teaching situation that incorporates the project into the curriculum.

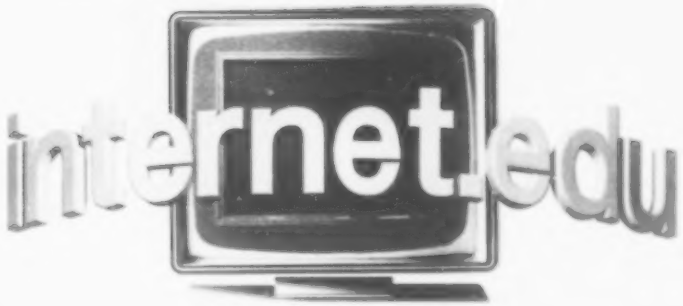
©Corwin Press

Classroom Activity #7

1. Have your students ask the local library whether it has a telnet address that is available to public access.
2. If so, structure a number of activities using this address.
3. If your local library does not have Internet access, check at the county level. Since county libraries serve a larger constituency, they are more likely to have an Internet link.

CHAPTER

10



POSTSCRIPT

Now that Pandora's Box is open, one more topic needs to be considered—that of *controversial information* and how to deal with it in and *out* of the classroom. While you may be able to control Internet access in the classroom, what the students do when they get home is another story. Imagine the following scenario.

> "Johnny . . . what are you doing?" Mother hollers from the other side of the house.
>
> "Nothing, Mom," Johnny replies.
>
> Mother goes to Johnny's room to check up on him. He is sitting at his computer, unaware that she has entered the room. A graphic image of a "babe" in a swimsuit catches her eye as she enters the room.
>
> "Where did you get *that*," she asks.
>
> Aware that danger is lurking, Johnny switches off his computer and calmly replies, "Oh, nowhere."
>
> "Young man, don't give me that. Where did you get that picture?"
>
> "Off of the Internet," Johnny replies innocently, trying to disarm his mother.
>
> "And who showed you how to do that?" Mother presses.
>
> "My teacher," Johnny cleverly replies. After all, why take the rap for this when you can shift the attention somewhere else.
>
> "What!?" The pitch of his mother's voice intensifies.
>
> "Oops," Johnny thinks to himself, "maybe that was a mistake."

It is easy to fill in the blanks for the rest of the story. No doubt someone will to do a lot of explaining, and that someone will probably be the teacher.

Of course Johnny's teacher did *not* show him how to retrieve the babe in the hot swimsuit. However, he or she did teach him how to use the Internet and thereby opened up a world of information to him which he would otherwise not have have known about. This raises the issue, What responsibility does the teacher have to make Johnny's parents aware of potential problems?

(c) Copyright Training and Publishing, Inc.

BEST COPY AVAILABLE

Most schools are attempting to deal with this by using what are called *Acceptable Use Policies* (AUPs), or perhaps more appropriately, *Bills of Rights and Responsibilities*. Some are very lengthy and obvious attempts by school districts to "cover themselves." Most, however, are honest efforts to deal with the issues of acceptable use of the Internet by making students aware of their responsibility and requesting parental cooperation. By creating and distributing AUPs, schools automatically forewarn parents about the problem of unsupervised Internet use by youngsters at home. Some also point out commercial products available that parents can use to block unacceptable material.

Disastrous scenarios are endless. For example, a Yahoo search with the simple term *sex* leads to endless X-rated links (in addition to educational ones). Such a search by young students at home can lead to many an irrate parent knocking on the school's front door after they find out where their children learned to surf the Net. And suddenly the whole school becomes Internet gun-shy.

It is in order to avoid such a scenario that the explorations in this chapter investigate a number of acceptable use policies and other preventive measures. Teachers, administrators, and school boards need to be dead serious about the issue of Internet use and how students can be protected from unsuitable material. So let's look at some acceptable use policies, one way of dealing with inevitable problems.

Teacher Exploration #1

1. Start by checking out one of the education collections from chapter 4. Gopher to **riceinfo.rice.edu:70/11/Subject/Education** or follow the alternate path suggested in chapter 3.
2. Select `Acceptable & unacceptable uses of Net resources (K12)`. A fairly large menu appears that has examples of AUPs as well as essays and discussions of issues surrounding the topic.
3. Read through the following menu choices before looking at actual AUPs, which are also on the menu. That way you will be fully aware of the issues, which will make it easier to judge AUPs and decide what features you may want to include in your own.

IDG Skylight Training and Publishing, Inc.

Cyberspace Superhighways: Access, Ethics, & Control
A panel discussion presented at John Marshall Law School's Fourth Conference on Computers, Freedom, and Privacy (March 1994).

Why Censoring Cyberspace is Futile
An editorial from the *San Francisco Examiner* by Howard Rheingold, which deals with freedom and restriction issues in cyberspace.

Information on Acceptable Use Policies
An essay by Dr. Clancy Wolf, Internet Coordinator for fifteen school districts in the state of Washington, which identifies the essential issues.

Minnesota Coalition Against Censorship
Take a look at both the "Internet Policy" and the "Internet Statement," which present strong statements in favor of openness on the Internet in terms of information presentation and access.

Protection and the Internet
An essay by Steve Cisler from the Apple Library.

Thoughts
Two letters posted to the mailing list COSNDISC (Consortium of School Networking Discussion).

5. Finally, be sure to read the menu item *ACLU Intervenes in the Paul Kim Censorship Case* in order to understand what some of the practical consequences can be when schools take actions against students.

Consider the following true story.

- *Paul Kim, a seventeen-year-old honor student created a "home page" on the WWW that was intended to be a parody of his high school. It contained links to Playboy's home page among other things, which school officials didn't like. Unhappy about Paul's spoof of the school, they decided to take measures against him, including sending letters to colleges he had applied to and withdrawing their recommendation for his acceptance. The ACLU decided to take on his case. You can read the full story in the menu item listed above.*

© SkyLight Training and Publishing Inc.

Now that you have explored some of the issues involved in AUPs, it s time to look at actual examples in use around the country.

Teacher Exploration #2

1. Gopher to **riceinfo.rice.edu:70/11/Subject/Education**.
2. Select `Acceptable & unacceptable uses of net resources (K12)`. Ten AUPs appear.
3. Scan through several and jot down features that you think should be considered for your school s Acceptable Use Policy.
4. Write a letter to the appropriate school officials in your school district about the need for an AUP and cite the resources offered in this activity.
5. Offer to head up, or serve on, a committee to study the issues and recommend an AUP to the school board. (Somebody s got to do it. Why not you?)
6. Check out Classroom Connect s AUP template. Find it on an FAQ about AUPs. If you like their sample, just fill in the blanks and you have a ready-made AUP. You can get it at: **http://www.wentworth.com**
7. Follow the links below:

   `>Resource station`
   `>Classroom connect info box`
8. Type your e-mail address in the box provided.
9. Click on `aup-faq`.
10. A copy of the FAQ will be printed to your screen.
11. If you decide you want it, use the back button on your browser and click on the `retrieve article` button.
12. That s it. The FAQ will be delivered to your e-mail box.

The next stop explores the Web site at Surfwatch. Some school districts and especially parents are considering products that effectively block much of the objectionable material on the Internet. Surfwatch is a company that caters to people looking for that type of approach. As stated in their home page introduction, "SurfWatch is a new type of software which helps parents, educators, and employers reduce the risk of children and others uncovering sexually explicit material on the Internet." It works by accessing its database of unacceptable sites and key words and blocking access to any site that matches a database item.

Teacher Exploration #3

1. Point your Web browser to **http://www.surfwatch.com/**. Click on `More information about Surfwatch`.
2. Read "`Who needs Surfwatch`" to see if their reasoning agrees with the approach you are considering.
3. If you are interested in site license costs, click on the e-mail address at the bottom of their home page. *Mailto:* will invoke your mailer and you can request the information **info@surfwatch.com**.

Please note: Consider including information about Surfwatch in your Acceptable Use Policy, publish it in your school newsletter, or include it as a link on your home page, if you have one.

The next activity explores NetNanny, another product that can be used as an Internet blocker. It differs from SurfWatch, which provides a blocked site list, in that the user (parent or teacher) must enter a list of his or her own unacceptable key words and unacceptable sites. NetNanny then uses those words to screen Internet usage.

© SkyLight Training and Publishing, Inc.

Teacher Exploration #4

1. Point your Web browser to **http://www.netnanny.com/netnanny/home.html.**
2. Click on Product and read through the product description in order to assess its capabilities.

   Be sure to look at the product comparison of NetNanny and SurfWatch.
3. While you are there, check out the hot link to *SafeSurf*, a grassroots effort by parents geared toward developing and implementing a workable Internet rating standard, at **index.html**.

SafeSurf, mentioned in the previous activity, has a head start in the Internet rating concept. They have designed a voluntary system by which any Web page may be classified as a safe site for children. A site that contains no objectionable material simply inserts a special code into its HTML script and then notifies SafeSurf, which previews the site.

SafeSurf hopes that as more and more Web sites seek their stamp of approval, a momentum will be established that will effectively result in all of the safe sites voluntarily jumping on the bandwagon. Instead of pointing out the bad sites, the focus is on identifying good sites. Both SurfWatch and NetNanny, as well as AOL, are considering the implications of tweaking their products to look for the SafeSurf code and blocking those without it.

Three additional consortiums are working on rating systems and philosophies. As of this writing, they were still in the talking stages. They are:

KidCode A standard developed by Internet trailblazer Nathaniel Borenstein that is in the process of being reviewed by the Internet Engineering Task Force. This standard would embed a rating into a Web site s URL. You can find all the details at **http:/www.librarysafe.com/kidcode.shtml**.

(R) SkyLight Training and Publishing Inc.

IMPEG (Informational Highway Parental Empowerment Group)—A group that includes Netscape, Microsoft, and Progressive Networks, its goal is to provide a voluntary rating system for the entire Internet, not just the WWW. Although there is no Web location yet, a site does exist at **http:/www.progret.com/contentp/rabest/IHPEG.html**. It describes the project and supplies addresses to write to for further inquiry.

The W3 Consortium—A group headed up by the giants in the communications field. Their approach is to add an unobtrusive rating to Web sites. Users would choose a Web site based on its rating (**http://www.w3.org/pub/WWW/**). The following informative links were found under Press Releases:

```
Recreational Software Advisory Council Launches Objective
Content-Labeling Advisory System for the Internet
Microsoft Backs Ratings System for Internet
Microsoft Teams with Recreational Software Advisory
Council to Pioneer Parental Control over Internet Access
SafeSurf Internet Rating System Receives Broad Support from
  Online Community
SurfWatch Endorses RSACi Content Advisory System
```

If this subject interests you, keep checking this page for the latest updates. The Internet *will* inevitably be rated and parents' and educators' concerns are what will make it happen. It is only a question of how it will be implemented and when.

Two other Internet blocker sites are worth checking out. They are CyberPatrol at **http://www.microsys.com/CYBER/** and CYBERsitter at **http://www.solidoak.com/cybersit.htm**. Visit these sites and make comparisons with the other products if you are seriously considering the use of an Internet blocker in your school or classroom.

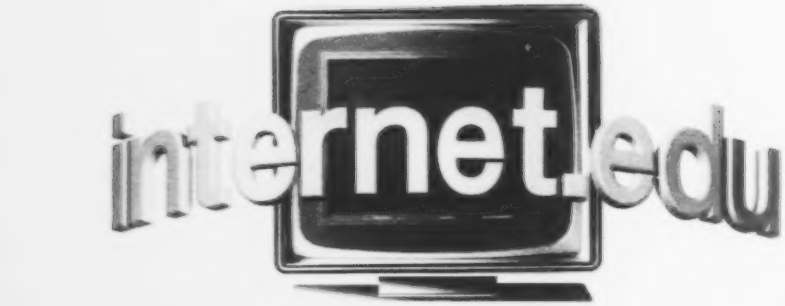
That pretty much covers the waterfront as to what is available to deal with this issue. By the time you read this book other approaches to the issue will most likely have surfaced. Use the search skills you have gained to investigate this topic further.

Pandora's box cannot be closed once it has been opened, but the creative spirits at work will find ways to protect kids from inappropri-

©Wayland Training and Publishing, Inc.

ate material that can be found on the Internet. The secret, if there is one, will lie in the cooperative responsibility of service providers, site owners, teachers, parents, and even kids. Believe it or not, even many of the adult sites are registering with an organization called Adult Check™, the Internet's largest adult-verification system. Maybe if we expect people to assume responsibility for the Internet, they will. Now there's a revolutionary thought!

© Copyright Training and Publishing, Inc.



APPENDIX

APPENDIX A

USING THE INTERNET.EDU LINK AT IRI/SKYLIGHT

All of the resources in *Internet.edu* have been archived on the IRI/SkyLight home page. Directions for access are listed below.

1. Point your Web browser to **http://www.iriskylight.com**.
2. Click on `Links to Other Educator Internet Resources`.
3. Cursor down the page to `Organizations with Valuable Resources for Educators`.
4. Click on `Internet.edu`.
5. These resources are organized according to the chapter in which they were introduced.

IRI/SkyLight Training and Publishing, Inc.

APPENDIX B

THE STRUCTURE OF AN INTERNET E-MAIL ADDRESS

All Internet e-mail addresses follow a rigid structure according to the Simple Mail Transfer Protocol. This structure is illustrated below.

The protocol for an e-mail address consists of three parts:

userid @ domainname

Examples:

raese@ix.netcom.com
aa121@detroit.freenet.org
ad070@leo.nmc.edu
sam145@aol.com
54321.678@compuserve.com

In general, your access to anyone with an *Internet* e-mail address is guaranteed if you follow this format. However, there are a number of exceptions. If you access a non-Internet e-mail service that uses an Internet gateway, the formatting may be different. Although an illustration is provided below, it is beyond the scope of this book to address this issue in detail.

For example, some mailing lists exist on Bitnet. To send e-mail to Bitnet, the following format must be used:

username % bitnetsite @ gateway

Example: The Mark Twain mailing list can be accessed by using **TWAIN-L%YORKVM1@cunyvm.cuny.edu**

If you want to explore the world of non-Internet e-mail in depth you can access **http://www.cis.ohio-state.edu/hypertext/faq/usenet/mail/inter-network-guide/faq.html**, where you will find an FAQ devoted to addressing protocols for various non-Internet BBSs and networks.

© SkyLight Training and Publishing Inc.

BEST COPY AVAILABLE

APPENDIX C

DIRECTIONS FOR DOWNLOADING GRAPHIC FILE

1. Point your Web browser to **http://beloit.edu/~facs/images/buttons/ok.gif**.
2. A smiley face button appears on your screen. (Note: this graphic may look different than the one used in this book.)
3. To download this .gif (graphic) file
   a. Select `File` from your browser's menu.
   b. Next, select `Save As`.
   c. Finally, select the directory on your hard drive or the diskette drive you want the file copied to.
   d. Press `Enter`, and you've got it!

This file can now be used to place the smiley face graphic on your practice home page. Make sure the file exists in the same directory as your practice home page.

If you wish to experiment with other graphic files in the public domain, go to: **http://beloit.edu/~facs/sample.html**.

It is the same site you obtained the smiley graphic from. Many other graphics are available. Just follow the directions you used for smiley face but insert the directory and filename of the graphic you wish to download.

For example: **http://beloit.edu/~facs/images/directoryname/filename**.

For the smiley, it was **http://beloit.edu/~facs/images/buttons/ok.gif**.

Place the address in the location box of your browser and the graphic you want to download will appear on your screen. Then follow step 3 as indicated above.

© Copyright Training and Publishing, Inc.

APPENDIX D

CU-SEEME—AN EMERGING INTERNET TECHNOLOGY

CU-SeeMe is an audio-video conferencing frontier technology started at Cornell University in late 1993. A number of schools around the world are currently experimenting with it. It requires specific hardware and software to function.

Essentially, CU-SeeMe technology allows people to communicate with each other in an audiovisual medium on the Internet. At the present time the visual quality of the transmission leaves something to be desired. It is the equivalent of a number of still frames tied together to give the appearance of a real-time TV appearance. The result is a jerky picture with missing frames. If the subjects remain still, the picture quality is pretty good.

If you are interested in learning more about this technology and how to use it, go to Cornell University at **http://cu-seeme.cornell.edu/**. This site contains several informational files that will get you started. If you want to explore this technology in-depth and see how various schools around the globe are using it, go to the Global School Network at **http://www.gsn.org/gsn/cu/index.html**.

If you are interested in downloading the software to participate in CU-SeeMe, go to White Pine Software at **http://goliath.wpine.com/cu-seeme.html**.

White Pine, which is currently collaborating with Cornell, is the official licensee of the software.

APPENDIX E

AN ARCHIE SEARCH

Chapter 7 promised a sample of an Archie search, which is a way to search through the existing software repositories to find the location of a particular file. If you know the name of a file or even the partial name, you can use Archie to find its site location and path.

In the past, you telnetted to one of several Archie sites and used it to do your search. Then you laboriously copied the site names and directory structure. Next you used your FTP client to access the site and navigated its directory structure to find the file you wanted. Ongoing development of the WWW has now made these sites available using a Web interface called Archieplex, a forms-based gateway to Archie servers located around the world. A limited number of Archie servers exist; you may have to wait and try again. Here's how you use it:

1. Point your Web browser to **http://hoohoo.ncsa.uiuc.edu/archie.html**.
2. Enter `virus` for the search string and select `University of Nebraska` for the Archie server.
3. Use the following parameters to fill in the rest of the forms.
   - by Host *(for the type of search return)*
   - case insensitive *(for the substring match)*
   - USA *(for the domain)*
   - 10 *(for the number of results)*
   - Nicest *(for impact on other users)*
4. Click on the `Submit` button.
5. The result will be at least ten hosts that have software, documents, or directories with the word *virus* in them.
6. Point and click and the download process begins.

You can see why the Web is quickly becoming *the* Internet interface!

IR/SkyLight Training and Publishing, Inc.

APPENDIX F

SUBJECT AREA, GRADE LEVEL RATINGS, AND URLS FOR TEACHER EXPLORATIONS BY CHAPTER

Key:

Grade Level
Lower Elementary (K–3)—LE
Upper Elementary (4–6)—UE
Middle School (6–8)—MS
High School (9–12)—HS
Teacher Resource—TR

Subject Area
General Education (all areas of curriculum)—GEN
Art—A
Science—S
Writing—W
Reading—R
Math—M
Physical Education—PE
Social Studies—SS
Music—MUS
Language Arts—LA
Foreign Language—FL

CHAPTER 1 Can the Internet Be Tamed?

Roadmap Seminar—TR; UE–HS; GEN
gopher://ualvm.ua.edu:70/11/
http://ualvm.ua.edu/~crispen/roadmap.html

©SkyLight Training and Publishing, Inc.

CHAPTER 2 **The Virtual Library Card Catalogue**

General Resources—TR; GEN

Yahoo
http://www.yahoo.com/

EINet Galaxy
http://www.einet.net/

Yanoff's Internet Services List
http://www.spectracom.com/islist/

WWW Virtual Library
http://www.w3.org/hypertext/Datasources/bySubject/Overview.html

InterNIC Directory & Database Services
http://www.internic.net/

Argus Clearinghouse
http://www.clearinghouse.net/

NCSA's Meta Index
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Metaindex.html

NCSA's Mosaic Home Page
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/NCSAMosaicHome.html

Searchable Registries — TR; UE–HS; GEN

Yahoo
http://www.yahoo.com/

Magellan
http://www.mckinley.com/

True Search Engines — TR; UE–HS; GEN

Alta Vista
http://altavista.digital.com

Excite
http://www.excite.com

© Skylight Training and Publishing Inc.

Infoseek Guide
http://guide.infoseek.com

Lycos
http://www.lycos.com

Open Text
http://www.opentext.com

WebCrawler
http://webcrawler.com

Search.com
http://www.search.com

CHAPTER 3 Educational Resources

Education Collections — TR; GEN

CICNet Gopher
gopher.cic.net:3005

Library of Congress
http://lcweb.loc.gov
Gopher to **marvel.loc.gov:70**

Rice University
Gopher to **riceinfo.rice.edu:70/11/Subject/Education**

NASA Online Educational Resources
http://quest.arc.nasa.gov/OER/EDRC25.html

Wentworth Worldwide Media (publishers of *Classroom Connect*)
http://www.classroom.net

Go M-Link
http://mlink.lib.umich.edu

Michigan State University
gopher://burrow.cl.msu.edu:70

North Carolina State University
gopher://dewey.lib.ncsu.edu:70

CHAPTER 4 **E-Mail**

Exploration #1

Yahoo Pen Pal Search — TR; GEN
http://www.yahoo.com

St. Olaf IECC — TR; UE–HS; GEN
gopher.stolaf.edu

AskERIC Pen Pal Mailing List — TR
listserv@suvm.syr.edu

Exploration #2 Keypals; Penpals

Kidscom — LE–HS; GEN
http://www.kidscom.com

Exploration #3 Electronic Publishing; E-Mail Submissions

KidPub — LE–MS; GEN; LA; W
http://www.kidpub.org/kidpub/

Midlink Magazine — LE–MS; A; W; LA
http://longwood.cs.ucf.edu/~MidLink/

KidNews — UE–HS; GEN; PE; LA; W
http://www.vsa.cape.com/~powens/Kidnews.html

Exploration #4 Ask the Expert E-Mail Forums

Ask Dr. Math — UE–MS; M
dr.math@forum.swarthmore.edu

Ask a Scientist — UE–HS; S
http://kiwi.dep.avl.gov/askasci/askasci.html

Ask-A-Geologist — UE–HS; S
Ask-A-Geologist@usgs.gov
http://walrus.wr.usgs.gov/docs/ask-a-ge.html

Exploration #5 Global Mailing List

Kidlink — UE–HS; GEN; SS; FL; LA
gopher://global.kidlink.org
http://www.kidlink.org/english/index.html

IRI/SkyLight Training and Publishing, Inc.

Exploration #6 New Internet Resources of Interest to Teachers

The Scout Report — TR; GEN

http://rs.internic.net/scout/report/

Exploration #7 Educational Mailing Lists

EdWeb — TR; GEN

http://k12.cnidr.org:90/lists.html

Exploration #8 Usenet News Educational Groups

EdWeb — TR; GEN

http://k12.cnidr.org:90/usenets.html

Exploration #9 Coke Servers

Web Coke Servers — LE–HS; GEN

http://www-cse.ucsd.edu/users/bsy/coke.html

CHAPTER 5 **The World Wide Web**

Explorations #1–3 — TR; GEN

Exploration #4 — TR; UE–HS; GEN

CHAPTER 6 **Gopher**

Exploration #1 Mother Gopher (U of MN) — TR; UE–HS; GEN

gopher://gopher.tc.umn.edu

Exploration #2 Veronica Search at Mother Gopher — TR; MS–HS; GEN

gopher://gopher.tc.umn.edu

Exploration #3 Boolean Searches — TR; MS–HS; GEN

gopher://gopher.tc.umn.edu

Exploration #4 Jughead Search — TR; MS–HS; GEN

gopher://gopher.itd.umich.edu

Exploration #5 Education Gophers — TR; GEN

gopher://gopher.tc.umn.edu

AskERIC — TR; LE–HS; GEN

gopher://ericir.syr.edu

Best of K-12 on the Internet — TR; LE-HS; GEN
gopher://informns.k12.mn.us:70/11/best-k12

Blacksburg Electronic Village — LE-HS; GEN
gopher://crusher.bev.net:70/11/Schoolhouse

Children's Literature--Electronic Resources — TR; LE-UE; R; LA;
gopher://lib.nmsu.edu.:70/11/.subjects/Education/.childlit

CICNet Gopher — TR; GEN
gopher://gopher.cic.net:3005/11/

Department of Education OERI — TR; GEN
gopher://gopher.ed.gov

Kidlink — UE-HS; GEN; SS; FL; LA
gopher://global.kidlink.org/

Library of Congress Gopher — TR; GEN
gopher://marvel.loc.gov:70

SchoolNet Gopher — TR; LE-HS; GEN; FL (French)
gopher://gopher.schoolnet.carleton.ca/

TENET Gopher — TR; UE-HS; GEN; A; SS; S
gopher://gopher.tenet.edu/

CHAPTER 7 FTP—Transferring Files on the Internet

Exploration #1 Shareware.com — TR; UE-HS; GEN
http://www.shareware.com

Exploration #2 Virus Checkers — TR; UE-HS; GEN

Exploration #3 Monster List of FTP sites — TR; HS; GEN
http://hoohoo.ncsa.uiuc.edu/ftp/
http://www.info.net/Public/ftp-list.html
Jumbo — TR; HS; GEN
http://www.jumbo.com

Exploration #4 Washington University Archive — TR; UE-HS; GEN; LA; R
ftp://wuarchive.wustl.edu

© SkyLight Training and Publishing, Inc.

Exploration #5 Project Hermes (Supreme Court Decisions) — TR; MS–HS; SS
ftp://ftp.cwru.edu/hermes
http://www.law.cornell.edu/supct/

Exploration #6 AskERIC Lesson Plans — TR; GEN
gophereric.syr.edu:70

Exploration #7 Internet Hunt Archive — TR; UE–HS; GEN
ftp://ftp.cic.net/pub/hunt/

Exploration #8 NASA Space Educator's Handbook — TR; S
http://tommy.jsc.nasa.gov/~woodfill/SPACEED/SEHHTML/seh.html

CHAPTER 8 IRC

Exploration #1 MAC IRC Client — TR; GEN
http://www.ircle.com/

PC IRC Client — TR; GEN
http://www.mirc.co.uk/index.html

Comparison of IRC Clients — TR; GEN
MAC **http://www.scescape.com/software/mac/IRC/index.html**
PC **http://www.scescape.com/software/win/irc.html**

IRC Server Sites — TR; GEN
http://www.newbies-netguide.com/irc/servers.html

Exploration #2 World Wide Web IRC Access — TR; MS–HS; GEN
http://www.alamak.com/chat/index.html

Exploration #3 IRC Information Site — TR; UE–HS; GEN
http://www.geocities.com/TheTropics/1945/index12.htm

Exploration #4 IRC Command Structure — TR; UE–HS; GEN

Exploration #5 Initiating a Chat Session — TR; UE–HS; GEN

Exploration #6 Operator Commands — TR; GEN

Exploration #7 Kidlink IR — TR; UE–HS; GEN
http://www.kidlink.org/IRC/

© SkyLight Training and Publishing, Inc.

CHAPTER 9 **Telnet—The Stone Age Internet Standard**

Exploration #1 CICNet Gopher — TR; GEN
gopher.cic.net

Exploration #2 Freenet Lists — TR; UE-HS; GEN
http://www.uucom.com/~glato/Freenets
http://www.usask.ca/~scottp/free.html

Exploration #3 MicroMUSE **telnet://guest.musenet.org**
Articles—Virtual Reality
http://www.musenet.org/micromuse/Muse.in.Education
http://www.sils.umich.edu/impact/students/jaye/jaye_asis.html

Exploration #4 Eisenhower National Clearinghouse — TR; M; S
telnet enc.org
Web site **http://www.enc.org**

Exploration #5 Martin Luther King Bibliography — TR; MS-HS; GEN; SS
telnet forsythentn.stanford.edu

Exploration #6 Newton—Argonne National Labs BBS — TR; MS-HS; GEN; S
telnet newton.dep.anl.gov
http://www.dep.anl.gov/

CHAPTER 10 **Postscript**

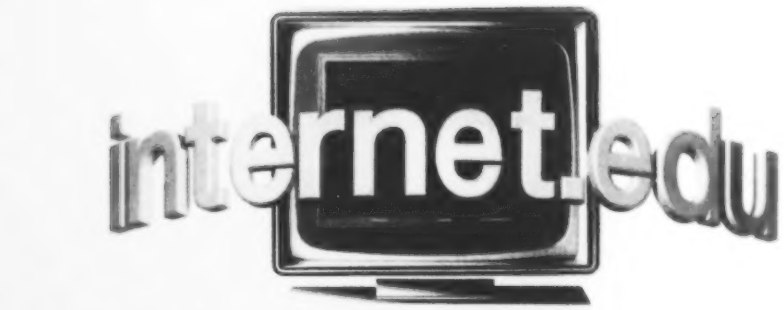
Exploration #1 Acceptable Use Policies — TR; GEN
gopher to **riceinfo.rice.edu:70/11/Subject/Education**

Exploration #2 Acceptable Use Policies — TR; GEN
gopher to **riceinfo.rice.edu:70/11/Subject/Education**
http://www.classroom.net

Exploration #3 Internet Blockers; SurfWatch — TR; GEN
http://www.surfwatch.com/

Exploration #4 Internet Blockers; NetNanny — TR; GEN
http://www.netnanny.com/netnanny/home.html
CyberPatrol **http://www.microsys.com/CYBER/**
CYBERsitter **http://www.solidoak.com/cybersit.htm**

IRI SkyLight Training and Publishing, Inc.



GLOSSARY

anonymous FTP the same as FTP. File Transfer Protocol. A method of accessing and downloading information from an FTP site. It is called anonymous because it is publicly available.

Archie A tool used to search all FTP sites.

Archieplex A specialized form of Archie that uses the World Wide Web as a user interface.

ASCII American Standard Code for Information Interchange. A standard that allows all computers to recognize textual material.

ASCII mode The protocol used to upload or download textual material from an FTP site during an FTP session.

AUP Acceptable Use Policy. A statement of the conditions under which a network may be used. Many schools are adopting Internet AUPs that spell out the responsibilities of Internet usage for students and parents.

binary data Any data that does not consist of simple text and must be represented by sequences of zeros and ones in some sort of encoding scheme. Images, sound, and software are examples of binary data.

bookmark As a verb, it is used to indicate a method for placing an Internet address in a file for recall at a later date. Used as a noun, it is an Internet address placed in a file.

Boolean A system of logic that shows a relationship between two or more entities using operators such as *and*, *or*, and *not*. Named after the nineteenth-century British mathematician, George Boole.

browser Software capable of reading HTML and accessing sites on the World Wide Web via the hypertext transfer protocol.

channel A term used with Internet Relay Chat (IRC) to indicate a dedicated domain of conversation. Sometimes called a chat room on the bigger bulletin board services.

chat room A channel.

client Any networked computer that is designed to access another computer called a server for the purpose of obtaining data or utilizing its resources.

client software The software that a client computer uses to interact with the software used by the server.

Coke Server A generic term for any computer usually dedicated to present unusual information such as the state of the coffee pot in the Trojan Room at Cambridge University. Its name originates in its first use in the 1970s by computer science students at Carnegie-Mellon University who kept track of the number of pop cans in the Coke machine and used Finger to access the information.

© SkyLight Training and Publishing, Inc.

Dalnet	One of the three major Internet Relay Chat networks.
domain name	The name that is used in place of the IP (Internet Protocol) address. For example, the domain name for IP address 137.113.10.35 is **liberty.uc.wlu.edu**, a computer at Washington & Lee University in Virginia.
download	A term used to represent the transfer of a file from a remote computer to your computer.
e-mail	Electronic messages (mail) conveyed on a computer network.
EFNet	The largest Internet Relay Chat network.
FAQ	The acronym for Frequently Asked Questions. Internet FAQ documents exist on many topics.
finger client	Internet software that allows access to public information about an Internet user from a finger server.
forms	A Web page device that allows the creator of a Web page to receive feedback from a reader of the page. All major browsers support forms that are part of the HTML 2.0 and 3.0 specifications.
freenet	A community computer network usually formed in association with a local university that provides the public with useful information and a link to the Internet. Freenets are funded through public and private funds but are free to the user, hence the name.
freeware	Software that is in the public domain and available free of charge.
FTP	File Transfer Protocol. An Internet service that makes it possible to transfer files to and from a remote computer.
.gif	The extension used to indicate a type of graphic file.
Gopher	A menu-driven Internet information service consisting of a Gopher client and a Gopher server.
Gopher space	The sum total of all the information on all the Gophers on the Internet.
home page	A document by which an individual or an organization can establish a presence on the World Wide Web, accessible with a Web browser.
HTML	Hypertext Markup Language. The formatting language used to create Web pages and utilized by World Wide Web browsers to "read" a Web page.
http:	Hypertext Transfer Protocol. The signal used at the beginning of a Web document to alert a browser that the address is a World Wide Web address.
hypertext	A specialized form of text containing links that enable the user to jump to other documents or Internet sites by clicking on the link.

©Copyright Thomson Learning and Publishing, Inc.

.hqx	An extension used to indicate a bin-hexed file, which is a type of encoding scheme used in the Macintosh environment.
Internet blocker	Software used to prevent access to objectionable Internet material and sites.
IRC	Internet Relay Chat. An Internet service that allows worldwide keyboard communication in real time by way of dedicated chat networks.
.jpg	The extension used to designate a type of graphic file; sometimes referred to as a JPEG file.
Jughead	A Veronica-like gopher searching tool that is localized to one Gopher.
link	A clickable highlighted portion of a hypertext document that transfers the user to some other document or Internet site.
listserv	Sometimes incorrectly used as a synonym for a mailing list, it is really software that takes care of all the housekeeping duties of a mailing list, such as adding or removing people from a list and forwarding mail messages.
Lynx	The most widely used text-only Web browser.
mailing list	A moderated or unmoderated e-mail forum usually focused on a specific topic and open to free subscription. Subscribers' e-mail messages and replies are routed to all other subscribers by a special computer called a listserv.
mailto:	A clickable HTML command within a hypertext document that invokes the individual's e-mail client.
MOO	Multi Object Oriented
MUD	Multi User Dimension
MUSE	Multi User Simulated Environment
MUSH	Multi User Shared Hallucination
	A family of sites at which participants can enter a virtual reality world, assume a virtual identity, and participate in a simulation game by using various game commands.
navigate	A term used to describe what Internet travelers do—they find their way around.
nest	A mathematical concept used to indicate the placement of a set of commands within another set of commands.
net	Shortened form of network.
news reader	A software program used to read articles from a Usenet News group.

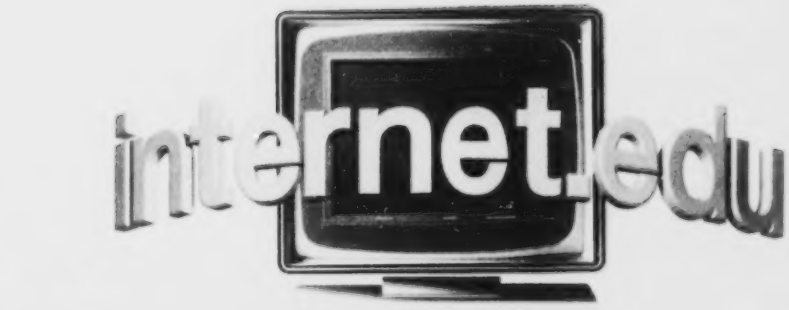
© SkyLight Training and Publishing Inc.

post	A general reply to a Usenet News article that is broadcast to the newsgroup for anyone to read.
PPP	Point to Point Protocol. An official Internet Protocol to establish a connection to the Internet via a service provider that enables the delivery of data packets as if your machine were directly connected to the Internet. It provides data compression and error checking.
protocol	An established code that prescribes a certain way of doing something; a set of rules.
public client	Software residing on a server available for public use by anyone connecting to that site.
real time	A term used to represent something happening right now, such as an IRC session.
remote server	A networked computer located at a removed location that makes information available to anyone who accesses it via a client computer. It can be located in the next room or on the other side of the world.
reply	A response to a Usenet News article intended only for the author of the article. More generally used to indicate a return e-mail message.
R.S.A.C.	Recreational Software Advisory Committee. A group working on a rating system for Internet sites not unlike the movie-rating system.
search engine	Any number of Internet search sites employing software that uses a spider to traverse the Internet, locate new sites, and add them to a searchable index.
server	Any networked computer designed to provide information or other resources to a client computer, which is dependant on the server to accommodate it.
server software	The software used by a server to interact with the client software.
service provider	A company or other organization that offers Internet access to its members or subscribers.
shareware	Software that is offered for limited trial use; if the user decides to keep the shareware, a registration fee must be paid.
.sit	The extension used to indicate a Macintosh file that has been stuffed or compressed.
SLIP	Serial Line Internet Protocol. An unofficial Internet protocol used to establish a connection to the Internet via a service provider, which enables the delivery of data packets as if your machine were directly connected to the Inernet. It does not support data compression or error checking.
SMTP	Simple Mail Transfer Protocol. The most common mail transfer method used to deliver Internet e-mail.

(R) SkyLight Training and Publishing, Inc.

snail mail	The U.S. Postal Service method of exchanging mail; much slower than e-mail, hence, the name.
spider	Specialized software, sometimes called a crawler, that search engines use to find new sites on the Internet to add to an established index.
subscribe	To join a mailing list.
surfing	Navigating the Internet.
sysop	A systems operator in charge of assuming the smooth functioning of a network or a particular server on the network.
telnet	One of several protocols used to access an Internet site.
Undernet	One of three major IRC networks.
Unix	A computer operating system.
unsubscribe	To "unjoin" a mailing list.
upload	The process by which a file is sent from your computer to another computer.
URL	Uniform Resource Locator. A World Wide Web address.
Usenet News	An e-mail facilitated forum that covers many areas of interest. Unlike mailing list messages, Usenet News messages are archived and the user must access them with a news reader instead of receiving them in his or her e-mail box. E-mail responses are posted to the News group archive for others to read.
Veronica	A tool used to search all of Gopher space and return its findings, which are accessed using a Veronica-built Gopher menu.
virtual library	The name usually given to the set of public information existing on the hard drives of computers around the world available via the Internet.
virus	A destructive piece of software program code purposely and covertly introduced into a computer's operating system and designed to disrupt or destroy the normal operation of the computer. Similar to biological viruses, computer viruses are capable of replicating and spreading to other computers and software.
WAIS	Wide Area Information Server. A computer that offers a searchable database of information, which can only be accessed using a WAIS client.
World Wide Web	The set of Internet sites that uses the hypertext transfer protocol and requires the use of a client called a Web browser, which translates the HTML format into text, sound, and graphics.
.zip	The extension used to indicate a compressed file within the PC environment.

© SkyLight Training and Publishing, Inc.



BIBLIOGRAPHY

Braun, E. 1994. *The Internet directory*. New York: Fawcett/Columbine.

Chalmers, Jessica. *Virtual education*. [Online]. Available for browsing from **http://www.musenet.org/~bkort/EdMud.html**.

Classroom Connect. 1994. Sample Issue. Lancaster, Pa.: Wentworth Worldwide Media.

Classroom Connect. 1994. Dec. Lancaster, Pa.: Wentworth Worldwide Media.

Classroom Connect. 1995. January–December. Lancaster, Pa.: Wentworth Worldwide Media.

Cooley, N., H.C. Crawley, and P. Gaskill. 1994. *Education central beginners handbook*. [Online]. Available via e-mail from **hccrawley.@edcen.ehhs.cmich.edu**.

Crispin, P.D. 1994. *Roadmap*. [Online]. Available via e-mail from **listserv@ualvm.ua.edu**.

Educator's Internet Companion. 1995. Lancaster, Pa.: Wentworth Worldwide Media.

The Educator's online resource guide. 1994. Lancaster, Pa.: Wentworth Worldwide Media.

A Glossary of Internet Terms. 1995. *Enhance* (Summer): 16–18.

Ernst, W. 1995. *Using Netscape*. Indianapolis: QUE Corporation.

First Looks. 1995. *PC Magazine* (April 11): 38–42.

Fisher, S. 1993. *Riding the Internet highway*. Carmel, Ind.: New Riders Publishing.

Gilster, P. 1994. *Finding it on the Internet*. New York: John Wiley & Sons.

Gilster, P. 1993. *The Internet navigator*. New York: John Wiley & Sons.

Hahn, H., and R. Stout. 1994. *The Internet complete reference*. Berkeley, Ca.: Osborne/McGraw Hill.

Hahn, H., and R. Stout. 1994. *The Internet yellow pages*. Berkeley, Ca.: Osborne/McGraw Hill.

HTML Primer. [Online]. Available via WWW at **http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html**.

Internet World. 1995. January–December. Westport, Conn.: Mecklermedia Corp.

Josar, D. 1996. Cops Crack Down on Child Porn Cases on the Internet. *The Detroit News* (Jan. 1): 1B.

Lapachet, Jaye A. H. 1995. *Virtual communities: The 90's mind altering drug or facilitator of human interaction?* [Online]. Available for browsing at **http://www.sils.umich.edu/impact/students/jaye/jaye_asis.html**.

Lemay, L. 1995. *Teach yourself Web publishing with HTML in a week*. Indianapolis: Sam's Net Publishing.

Lemay, L. 1995. *Teach yourself more Web publishing with HTML in a week*. Indianapolis: Sam's Net Publishing.

LaQuey, T. 1994. *The Internet Companion: A beginner's guide to global networking*. 2d. ed. New York: Addison-Wesley.

© Skylight Training and Publishing, Inc.

Levine, J., and C. Baroudi. 1993. *The Internet for dummies*. San Mateo, Ca.: IDG Books Worldwide, Inc.

Levine, J. 1993. *Unix for dummies*. San Mateo, Ca.: IDG Books Worldwide.

Mancuss, S. 1995. Internet Roadmaps: Cybersteps for the Unitiated. *Electronic Learning* (May—June): 12.

Marine, A., and others. 1993. *Internet: Getting Started*. Englewood Cliffs, N.J.: Prentice Hall.

Maxwell, C., and C.J. Grycz. 1994. *New Rider's official Internet yellow pages*. Indianapolis: New Riders Publishing.

101 Best Net Bets. 1995. *P.C. Computing* (May): 166—74.

P.C. Staff. 1995. The 1001 Best Web Sites. *P.C. Magazine* (December): 121—154.

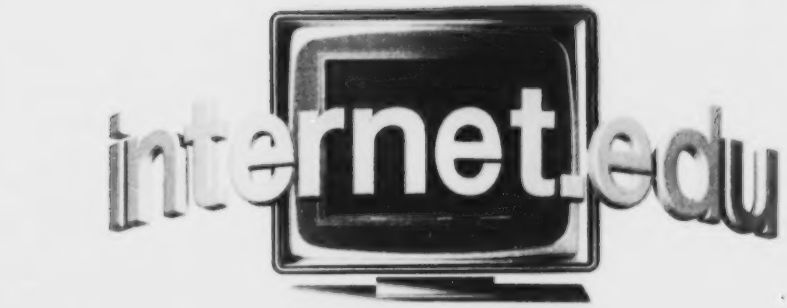
Pike, M.A. 1995. *Using the Internet*. 2d. ed. Indianapolis: QUE Corp.

Plummer, W., and L. Harrison. 1995. The World at Their Fingertips. *People Magazine* (Dec. 4): 123—25.

Protheroe, N., and E. Wilson. 1995. *The Internet handbook for school users*. Arlington, Va.: Educational Research Service.

Tennant, R. 1995. Begin Your Presence on the WWW: Resources for Creating Your Own Home Page. *Syllabus* (September): 42.

Wolgemuth, A. 1996. *Learning Online*. Arlington Heights, Ill.: IRI/SkyLight Training and Publishing.



INDEX

Acceptable Use Policy (A.U.P), 187–89
  Paul Kim censorship case, 188

Bookmark, 26, 123
Boolean operators, 116, 120

Coke server, 55–56

Directories, General Internet
  EINet Galaxy, 18
  InterNIC Directory & Database Services, 18
  NCSA Mosaic home page, 19
  NCSA's Meta Index, 19
  University of Michigan Clearinghouse, 19
  WWW Virtual Library, 18
  Yahoo, 18
  Yanoff's Special Connections, 8, 20

Education Collections
  Go M-Link, 32
  Library of Congress, 26–29, 32
  Michigan State University, 32
  NASA, 29, 32
  North Carolina State University, 32
  Rice University, 28, 32
  Wentworth Worldwide Media, 30, 32
E-mail, 7, 11, 36–61
  Ask A Scientist, 49, 59
  Ask Dr. Math, 48
  Ask Professor Math, 48
  Ask-A-Geologist, 49
  Ask the Expert, 48
  Conventional, 38
  IECC, 41–45
  Mailto:, 39
  Post, 40
  Reply, 40
  SchoolWeb, 82
  Simple Mail Transfer Protocol (S.M.T.P), 38

File compression, 130–32
Finger, 7, 11, 54–57
FTP, 7, 11, 21, 58, 126–49
  Archie, 135
  Sites
    Ask ERIC Archives, 119, 140
    Hunt Archives, 142, 148
    Jumbo, 130
    Merit Archives, 144
    NASA, 142
    Oakland University, 130
    Shareware Com, 133
    Washington University, St. Louis, 136
    Project Gutenberg, 137, 148
    Project Hermes, 137, 148
    Wentworth Worldwide Media, 189

Gopher, 107–23
  Jughead, 26, 107–23
  Sites
    Ask ERIC 119, 140
    Best of K12 on the Internet, 119
    Blacksburg Electronic Village, 119
    Children's Literature—Electronic Resources, 119
    CICNet, 119
    Department of Education, 119
    KidLink, 49, 119
    Library of Congress, 26–29, 32, 119
    Math Forum, 48
    Michigan State University, 32
    Mother Gopher—University of Minnesota, 109
    NASA Spacelink Project, 171
    North Carolina State University, 32
    RiceInfor (Rice University), 32
    School Net Gopher, 120
    St. Olaf College, 41
    TENET Gopher, 120
    University of Alabama, 32
  Tunneling, 110
  Veronica, 26, 107–23

Home page, 66
Hypertext Markup Language (HTML), 13, 65–66, 68–82, 115

Internet blockers
  Cyber Patrol, 192
  CyberSitter, 192

(R) SkyLight Training and Publishing, Inc.

NetNanny, 190
SurfWatch, 190
Internet rating standards
Information Highway Parental Empowerment Group (IMPEG), 192
KidCode, 191
SafeSurf, 191
W3 Consortium, 192
IRC, 7, 11, 152–65
Alamak IRC Web gateway, 156
Commands, 158, 159
DALnet, 152, 158, 159, 164
EFNet, 152, 164
IRCLE, 155
Kidlink IRC, 162, 164
MicroMUSE, 153, 162, 171
mIRC, 155
Undernet, 164

Key pal, 41–45

Listserv, 38

Mailing list
KidLink, 49
The Scout Report, 50

PPP, 154

Roadmap Seminar, 10, 13–14

Searchable registries
Magellan, 20
Yahoo, 7, 20, 82
Search engines, 19, 82
Alta Vista, 20, 21, 82, 85, 106
Excite, 21
InfoSeek Guide, 21
Lycos, 21, 64
Open text, 21
Search.com, 21
Web Crawler, 21
SLIP, 154

Telnet, 7, 11, 167–84
MUDs, MOOs, Muses, 173
Site list, 171
Academy One, 171, 172
Cleveland Free-Net, 171
ERIC, 168
Eisenhower National Clearinghouse, 171, 177
Big Sky Lesson Plans, 178
Elementary Science This Month, 178
Good News Bears Stock Market Project, 178, 183
Googolplex, 178
Hands-On the Florida Aquarium, 178
Puzzle Corner, 178
Web Elements (Periodic Table), 178
Freenet list, 172
Geographic Name Server, 171
Martin Luther King Bibliography, 171, 179
MicroMuse, 171, 173–76, 180
NASA Spacelink, 170, 171
Newton BBS, 171, 180
Weather Underground, 171

Usenet News, 7, 11, 21, 40, 52, 57

Virus protection, 129

WAIS, 7, 11
Web browsers
Internet Explorer, 66, 80
Lynx, 17, 81, 85
Mailto:, 39
Mosaic, 19, 66, 80
NetCruiser, 80
Netscape, 17, 66, 106
Web server, 81–82
Web sites
Ask-A-Geologist, 49
Classroom Connect, 31
Coke servers, 55–56
EdWeb, 52
Go M-Link, 32
International Registry of K12 Schools on the Web, 68

©Skylight Training and Publishing, Inc.

KidNews, 47
KidPub, 46, 59
KidsCom, 45, 59–60
Math Forum, 48
MathMagic, 48
MidLink Magazine, 47
NASA, 32
TheScout Report, 50
Web66, 81
Wentworth Worldwide Media, 30, 32, 82
World Wide Web field trips
Berger Foundation Art Treasures, 102
Concertina Story Collection, 93
Entomology Resources, 94
Franklin Institute Science Museum, 101
Frog Dissection Kit, 88
IECC, 91
Intercultural E-Mail Classroom Connections, 91
IRI/SkyLight, 105
Lite-Brite Asylum Gallery, 95
MSU Weather Station, 96
Museum of Paleontology, 89
Music Education Resources, 98
Online Writing Lab, 87
Routeics, 92
Starchild Project, 94
The Comic Strip, 103
The Field Museum, 104
The Hub, 100
Theodore Tugboat, 90
U.S. Congress Thomas Web, 99
White House, 86

IRI/SkyLight Training and Publishing, Inc.

SkyLight

Learn from Our Books *and* from Our Authors!

Bring Our Author/Trainers to Your District

At IRI/SkyLight, we have assembled a unique team of outstanding author/trainers with international reputations for quality work. Each has designed high-impact programs that translate powerful new research into successful learning strategies for every student. We design each program to fit your school's or district's special needs.

1 Training Programs

IRI/SkyLight's training programs extend the renewal process by helping educators move from content-centered to mind-centered classrooms. In our highly interactive workshops, participants learn foundational, research-based information and teaching strategies in an instructional area that they can immediately transfer to the classroom setting. With IRI/SkyLight's specially prepared materials, participants learn how to teach their students to learn for a lifetime.

2 Network for Systemic Change

Through a partnership with Phi Delta Kappa, IRI/SkyLight offers a Network for site-based systemic change: *The Network of Mindful Schools*. The Network is designed to promote systemic school change as possible and practical when starting with a renewed vision that centers on *what* and *how* each student learns. To help accomplish this goal, Network consultants work with member schools to develop an annual tactical plan and then implement that plan at the classroom level.

3 Training of Trainers

The Training of Trainers programs train your best teachers, those who provide the highest quality instruction, to coach other teachers. This not only increases the number of teachers you can afford to train in each program, but also increases the amount of coaching and follow-up that each teacher can receive from a resident expert. Our Training of Trainers programs will help you make a systemic improvement in your staff development program.

To receive a FREE COPY of the IRI/SkyLight catalog or more information about trainings offered through IRI/SkyLight, contact CLIENT SERVICES at

IRI SkyLight
TRAINING AND PUBLISHING, INC.
2626 S. Clearbrook Dr. Arlington Heights, IL 60005
800-348-4474 • 847 290-6600 • FAX 847 290-6609

BEST COPY AVAILABLE

There are
one-story intellects,
two-story intellects, and three-story
intellects with skylights. All fact collectors, who
have no aim beyond their facts, are one-story men. Two-story men
compare, reason, generalize, using the labors of the fact collectors as
well as their own. Three-story men idealize, imagine,
predict—their best illumination comes from
above, through the skylight.

—*Oliver Wendell*
Holmes

internet.edu

One way to learn something new is to just dig in. *internet.edu* is a hands-on book that demystifies the Internet by "teaching you to fish," to borrow part of a time-tested maxim. It paves the way for endless Internet classroom applications with a wealth of online activities that provide a cohesive model of the Internet and put the wealth of its resources in your hands. Applications and activities include

- creating a simple home page using HTML
- conceptual models of the Internet
- twenty World Wide Web "field trips"
- an exploration of the tunnels of Gopher space
- a look at Acceptable Use Policies (AUPs) adopted by schools around the country
- a trip to Cyberion City II, a multiuser "virtual" futuristic game
- a look at the world of freeware and shareware

internet.edu is divided into two sections—The Basics and The Details. Both sections contain numerous teacher explorations into the vast resources of cyberspace. Each of the seven chapters in the second section includes classroom activities that not only point your students to the Internet's many valuable resources but also help them understand the Internet and how to use it.

Areas explored include e-mail, the World Wide Web, Gopher, Internet Relay Chat (IRC), and telnet. Alternative paths for Internet access are offered for those who don't have a Web browser.

The informal and easy-to-read style of *internet.edu* and the adaptability of its hands-on activities to virtually any grade level make it a book to keep at your side as you guide your students through the many possibilities of the Internet.

Robert Raese

Bob has been a classroom teacher for more than three decades. He developed his interest in computer technology during the 1970s when two of his geometry students taught him to program a Texas Instruments computer. Currently in charge of the Computer-Aided Instruction lab at Cousino High School in Warren, Michigan, Bob also heads a pilot program to integrate technology and the Internet into the English curriculum. As a monthly columnist for the computing magazine *The Internet Connection*, Bob offers practical tips for mastering the Internet's various tools and services.

SkyLight
TRAINING AND PUBLISHING, INC.
2626 S. Clearbrook Dr. Arlington Heights, IL 60005

ISBN 1-57517-072-8
90000
9 781575 170725

BEST COPY AVAILABLE